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# **A FLEXIBLE FIT**

DEVELOPING A SUITABLE MANUAL FRAMEWORK FOR  
PERSON ATTUNED MUSICAL INTERACTION IN  
DEMENTIA CARE THROUGH A REALIST APPROACH

BY  
**JENS ANDERSON-INGSTRUP**

DISSERTATION SUBMITTED 2020



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## CV

Jens Anderson-Ingstrup graduated from Aalborg University with an MA degree in music therapy in 2015. Following his graduation, he was employed at University College Nordjylland, where he taught courses on neuropsychology, music, music therapy and the sensory system. He also carried out clinical work as a private music therapist, working with clients from the areas of developmental disorders, neurorehabilitation and dementia. He enrolled as a PhD fellow at the doctoral school of music therapy in August 2016, and in the Spring of 2020, he completed courses on information visualisation at the Interaction Design Foundation.

His areas of research include dementia, anxiety disorders, neurorehabilitation, basic research concerning music and arousal, as well as information visualisation.

His interests outside of research include bushcrafting, tree-climbing, and parkour.





# ENGLISH SUMMARY

In this thesis I discuss the potential paradox of creating a manual that is meant to guide persons in conducting *person attuned musical interactions*. The paradox is that manuals can be considered as something fixed and inflexible, while successful person attuned musical interactions require a high degree of flexibility and adaptability. Following a realist approach, I investigate and discuss mechanisms that underlie manuals about complex interventions, and I explore the concept person attuned musical interaction.

The methods include literature reviews (e.g., state-of-the-art and scoping reviews), video analysis, conversation analysis, analogue and software-supported methods (e.g., Melodyne and ELAN) of extracting information regarding musical parameters, and phenomenological approaches. The data includes video material and publications.

The thesis is compiled by three separate articles and this linking text.

Article 1 is a state-of-the-art literature review where I question the understanding of mirror neurons through a review of the evidence regarding their presence in the human brain and possible connection to phenomena such as empathy and imitation. While one study has located neurons showing “mirroring properties” in the human brain, the evidence concerning their involvement in phenomena such as empathy and imitation is lacking or contradicting. Based on the findings of this review it is not recommended to apply the concept of mirror neurons as a fact-laden frame to explain these phenomena, which could be of relevance when describing person attuned musical interactions.

Article 2 is a scoping review where I explore the design of manuals about complex interventions in the field of dementia. Specifically, the analysis concerns the dissemination elements in the manuals, the level of flexibility of the manuals, and the possibility of tailoring the intervention disclosed by the manuals. The results show that the main dissemination elements include written text and a variety of different graphical organisers. None of the manuals contain audio/visual elements, animate or in-animate. All manuals allow tailoring of the intervention and the majority show a medium degree of flexibility. Based on the results it is recommended that developers of future manuals consider the inclusion of audio/visual material, allow tailoring of the intervention, and maintain a certain degree of flexibility in the manual.

Article 3 is an analysis of video material of a music therapy session with a music therapist and a person with dementia. Inspired by conversation analysis, I analyse and examine the use of music in the interaction between the participants and the development of the quality of their interaction. The method included a phenomenological transcription of the content of the video, extraction of data

concerning musical parameters using analogue and software-based methods, and a detailed sequential analysis of the interaction between the participants. The results included an overview of how different musical parameters changed in accordance with the state of the interaction, specifically regarding different types of tempo variations. The results further indicated the presence of two sections in the interaction; a person attuned musical arousal regulation process and a person attuned musical interaction process, where the quality of the interaction shifted from being one-sided to being reciprocal with more equality regarding initiations in the interaction.

The linking text introduces the context for the thesis, presents expanded reflections regarding the methodology of the project, and provides answers for the research questions of the thesis. This includes presenting an ontology for the concept “a manual” and a discussion based on a realist perspective of relevant mechanisms that constitutes an applicable manual. Based on this discussion I propose a framework that can be used to guide the development of manuals. Finally, I provide suggestions regarding the application of the findings, as well as strategies to limit the limitations of the project.

The thesis is part of the PAMI project located at Aalborg University and is funded by the Velux Foundation.

# DANSK RESUME

I denne afhandling diskuterer jeg det potentielle paradoks der kan være ved at lave en manual, som skal guide personer i at udføre *person-afstemte musikalske interaktioner*. Paradokser består i, at manualer kan anses som noget fikseret og ufleksibelt, hvorimod succesfulde person-afstemte musikalske interaktioner kræver høj grad af fleksibilitet og tilpasningsmulighed. Ved at følge en realisttilgang undersøger og diskuterer jeg mekanismer som er forbundet til manualer angående komplekse interventioner, og jeg udforsker konceptet person-afstemt musikalsk interaktion.

Jeg anvender metoder såsom litteraturgennemgange (fx state-of-the-art gennemgange og *scoping reviews*), videoanalyse, konversationsanalyse, analoge og softwareunderstøttede metoder (fx Melodyne og ELAN) til udtrækning af information vedrørende musikalske parametre samt fænomenologiske tilgange. Data inkluderer videomateriale og publikationer.

Afhandlingen består af tre separate artikler og denne *linking text*.

Artikel 1 er en state-of-the-art litteraturgennemgang, hvor jeg undersøger evidensgrundlaget for tilstedeværelsen af spejlneuroner i menneskehjernen samt deres mulige forbindelse til fænomener såsom empati og imitation. Til trods for at et enkelt studie har kunnet påvise tilstedeværelsen af neuroner med "spejl-egenskaber" i menneskehjernen, er evidensgrundlaget for deres sammenhæng med empati og imitation manglende eller modstridende. Ud fra resultaterne af denne gennemgang kan det ikke anbefales at anvende konceptet spejlneuroner som et faktuel grundlag for at forklare disse fænomener, som kan være relevante i forbindelse med at beskrive person-afstemte musikalske interaktioner.

Artikel 2 er et *scoping review*, hvor jeg undersøger designet af manualer om komplekse interventioner til brug i demensomsorgen. Analysen omhandler helt konkret manualernes formidlingselementer, grad af fleksibilitet og mulighed for at skræddersy den intervention, der er beskrevet i manualen. Resultaterne viser, at de primære formidlingselementer er skrevet tekst samt et udvalg af grafiske organiseringsselementer. Ingen af manualerne indeholder audio/visuelle elementer, hverken animerede eller ikke-animerede. Alle manualer tillader skræddersyning af interventionen, og størstedelen har en medium grad af fleksibilitet. På baggrund af resultaterne anbefales det at overveje inklusionen af audio/visuel materiale, tillade skræddersyning af interventionen og opretholde en vis grad af fleksibilitet i manualen.

Artikel 3 omhandler en analyse af videomateriale fra en musikterapisession, med en musikterapeut og en person med demens. Analysen er inspireret af konversationsanalyse og omhandler brugen af musik i deltagernes interaktion samt udviklingen af kvaliteten af deres interaktion. Metoden indebærer en fænomenologisk

transskription af videoens indhold, udtrækning af data om musiske parametre gennem analoge og softwarebaserede metoder samt en detaljeret sekventiel analyse af deltagernes interaktion. Resultaterne inkluderer et overblik over, hvordan forskellige musiske parametre ændres i sammenhæng med interaktionens kvalitet, særligt med fokus på forskellige former for tempovariationer. Resultaterne peger ydermere på tilstedeværelsen af to sektioner i interaktionen; en person-afstemt musikalsk arousalregulerende proces og en person-afstemt musikalsk interaktion, hvor kvaliteten af interaktionen ændrer sig fra at være ensidig til at være gensidig og mere jævnbyrdig, hvad angår initiativtagningerne i interaktionen.

I denne *linking text* præsenteres konteksten for afhandlingen, uddybende refleksioner angående projektets metodologi, og der gives et svar på afhandlingens forskningsspørgsmål. Dette indebærer en præsentation af ontologien for konceptet ”en manual”, samt en diskussion af relevante mekanismer, der udgør en anvendelig manual ud fra et realistperspektiv. Ud fra denne diskussion præsenterer jeg et *framework*, som kan bruges til at guide udformningen af manualer. Til sidst giver jeg forslag til resultaternes anvendelsesmuligheder samt strategier til at videreudvikle relevante områder, der ikke blev inkluderet i afhandlingen.

Projektet er en del af PAMI projektet, som hører under Aalborg Universitet, og er økonomisk støttet af Velux Fonden.

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# LIST OF PHD PUBLICATIONS

## Article 1:

Anderson-Ingstrup, J. (2017). Spejlneuroner – et state-of-the-art review. *Dansk Musikterapi*, 14(2), 3–16.

## Article 2:

Anderson-Ingstrup, J., & Ridder, H. M. (2020). A scoping review and template analysis of manual-based complex interventions in dementia care. *Clinical Interventions in Aging*, 15, 363–371.

## Article 3:

Anderson-Ingstrup, J., Ridder, H. M., & Davidsen, J. G. (2020). *The use of music in a person attuned musical arousal regulation process with a person with dementia. An explorative video analysis*. [Manuscript submitted for publication]. Department of Communication and Psychology, Aalborg University.

## Conference presentations related to the thesis

Ridder, H. M., Madsen, M. B., Anderson-Ingstrup, J., & McDermott, O. (2016, July 5-9). *The use of music therapy components to promote interaction between a person with dementia and a caregiver* [Paper presentation]. EMTC: A Symphony of Dialogues, Vienna, Austria.

Ridder, H. M., Madsen, M. B., Anderson-Ingstrup, J., & McDermott, O. (2017, July 4-8). *The development of Person Attuned Interaction (PAMI) for people with dementia* [Paper presentation]. 15<sup>th</sup> World Congress of Music Therapy, Tsukuba, Japan.

Anderson-Ingstrup, J., Knardal, S. E., Lindblad, K., Ottesen, A. M., & Ridder, H. M. (2018, July 7-12). *The role of music therapists in interdisciplinary competence development in dementia care* [Paper presentation]. Nordic Music Therapy Congress: Come together: Body & soul – heart & brain, Lidingö, Sweden.

Anderson-Ingstrup, J. (2019, August 28-September 1). *Reflecting on possible outcomes in music therapy for people with dementia* [Keynote speaker]. IV Congresso Ibero Americano de Investigação em Musicoterapia, São Paulo, Brazil.

Anderson-Ingstrup, J. (2019, August 28-September 1). *Creating clinical manuals in music therapy* [Keynote speaker]. IV Congresso Ibero Americano de Investigação em Musicoterapia, São Paulo, Brazil.

# CHAPTER 1. INTRODUCTION

---

*“If one is to truly succeed in leading a person to a specific place, one must first and foremost ensure finding him where he is and begin there. This is the secret to the art of helping (. ...)  
In order truly to help Another, I must understand more than him - but first and foremost understand what he understands. If not, my greater understanding does not help him (. ...) All true helping begins with a humbling; the helper must first humble himself below the person he seeks to help, thereby understanding that helping is not dominating but serving, that helping is not being the most dominating but the most patient.”*  
(Kierkegaard, 1859/1991, pp. 96-97)

---

In this introductory chapter I will present conceptual frameworks regarding the fields that constitute the thesis, the architecture of the linking text, and the connection to the three associated articles. I will then present information regarding dementia, my personal motivation for conducting this PhD, describe the context of the thesis in relation to other related projects, and a conceptualisation of the concept *person attuned musical interaction*. The chapter ends with a presentation of my initial problem statement and research questions, the development of them during the course of the project and their final shape.

## 1.1. CONCEPTUAL FRAMEWORK AND “WHAT IS YOUR RESEARCH ALL ABOUT?”

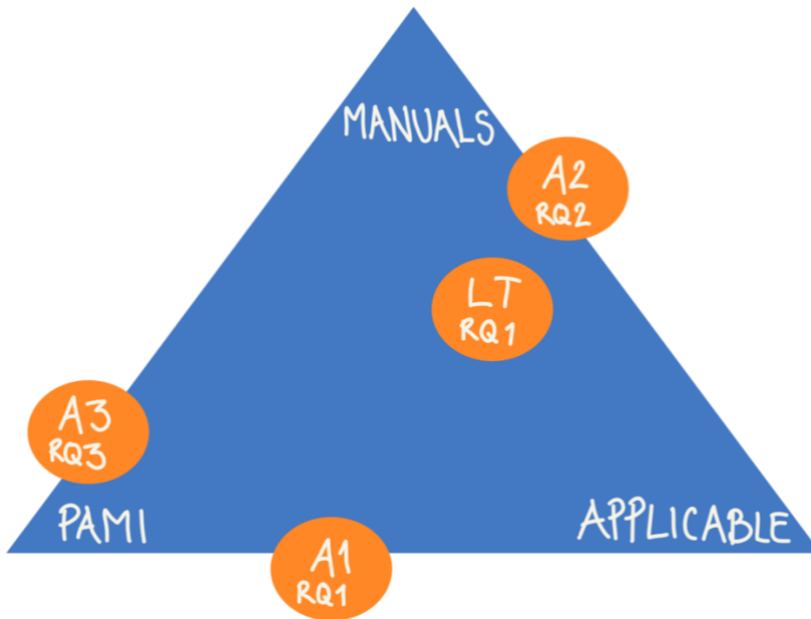
One way of clarifying the topic of a thesis is to provide an answer to the question “what is your research all about?” (Trafford & Leshem, 2008). My simple answer to this question would be, that, first of all, my research is all about investigating and proposing knowledge that can aid the design of *manuals* describing complex interventions by detailing mechanisms that may affect the *applicability* of a manual in a specific context. Secondly, it is all about contributing to the construction and definition of the phenomenon *person attuned musical interaction* (PAMI). To illustrate the focus of my research, I have conducted a quantitative content analysis (Eskjær & Helles, 2015) of this linking text using the “word count” analysis feature in NVivo 12, that shows the 10 most frequent appearing words in this linking text. The words are presented as a word cloud in figure 1 and the words *manual*, *dementia*, *music*, *PAMI*, and *person* are highlighted, which for me perfectly illustrates the main topics of my research.



*Figure 1 Word cloud showing the 10 most frequent words appearing in this linking text.*

This article-based thesis is composed of three articles and a linking text. The three articles cover topics that are related to attuned musical interaction and manual based complex interventions in dementia care. Article 1 is a state-of-the-art literature review where I discuss the existence and possible functions of mirror neurons in the human brain (Anderson-Ingstrup, 2017). Article 2 is a scoping review that leads to an analysis of different properties of manuals regarding complex interventions in dementia care that are published in refereed journals (Anderson-Ingstrup & Ridder, 2020). Article 3 is based on principles from conversation analysis, where I explore an arousal regulation- and interaction process between a music therapist and a person with dementia by analysing video material with the purpose of extracting information regarding the use of music and the nature of the arousal regulation- and interaction process (Anderson-Ingstrup et al., 2020). The numbering of the articles refers to their chronological creation and is not an indicator of hierarchically importance. The purpose of the linking text is to introduce the conceptual framework where the articles are situated, expand on and present my reflections regarding the research methodology and of the methods applied in the articles, as well as to further explore and develop the results that are crucial to answering research question 1 (see chapter 1.6.1). I have structured the linking text so that the chapters lead up to answering research question 1. The connection of the articles to the linking text is described in chapter 1.1.1.

Besides briefly presenting the content of this thesis, I will present the structure of the thesis and the connection between the linking text, the three publications, and my research questions. Following on from Leshem and Trafford (2007), I have created the following mind map, that illustrates the relation between the topics, the publications, and research questions (see figure 2).



*Figure 2 Structure of the thesis and the relations to the articles, the linking text, and the research questions*

The mind map shows a blue triangular shape with the three topics “Manuals”, “PAMI”, and “Applicable”, as well as four orange elliptical shapes. The elliptical shapes represent the three articles and the linking text that are the building blocks of this thesis, discernible by the abbreviations written on them (e.g., A1 = Article 1, LT = linking text, RQ1 = research question 1). The abbreviations partially serve to identify the building blocks, and they illustrate where the different research questions are addressed (see chapter 1.6.1). The spatial positioning of the elliptical shapes illustrates how the products of the thesis are related to the three main topics.

Research question 1 is connected to Article 1 and this linking text, research question 2 is connected to Article 2, and research question 3 is connected to Article 3. Article 1 is placed on the edge of the triangle between *PAMI* and *applicable*, yet closest to *PAMI*, as it is mainly related to providing an understanding of this topic. Article 2 is placed on the edge between *manuals* and *applicable* and is closest to *manuals*, as this is the main topic of the article. Article 3 is placed on the edge between *PAMI* and *manuals* and is closest to *PAMI*, as the results of the article provides a description of the topic. The linking text is placed in the triangle, slightly off-centred towards *applicable* and *manuals*, as the linking text address all three topics, yet is mainly concerned with discussing how a manual framework may be constructed to achieve applicability in different settings (see chapter 1.6.1).

To further clarify the content of this linking text and the connection to the three articles, I will present a disposition detailing the content of each chapter and their connection to the three articles, as well as providing recommendations regarding when the three articles can be read as part of reading this linking text.

### 1.1.1. DISPOSITION

- Chapter 1. This introductory part includes information regarding dementia, contextual information regarding the thesis, and my conceptualisation of PAMI. This includes a presentation of the results of Article 1. The chapter concludes with presenting my initial problem statement and research question as well as the final research questions. I recommend reading Article 1 **following** chapter 1.5.
- Chapter 2. The second chapter presents reflections and results from two different directions I took during the unfolding of the project which were not completed. The preliminary results of these are included in the conclusion.
- Chapter 3. The third chapter is concerned with the main methodology applied in the thesis and my ethical considerations.
- Chapter 4. The fourth chapter contains expanded reflections regarding the methods and transcription style applied in Article 3. Also, the main results will shortly be summarised. I recommend reading Article 3 **prior to** reading chapter 4.
- Chapter 5. The fifth chapter contains a deeper exploration of the concept “manuals”. The exploration builds on the findings from Article 2 and is broadened to include other relevant concepts in order to inform the discussion. I recommend reading Article 2 **after** reading chapter 5.3.
- Chapter 6. This chapter contains my discussion. In this chapter I will synthesise the findings presented in chapter 5 and relate them to PAMI. I will also discuss some of the limitations concerning my results.
- Chapter 7. This chapter contains the conclusion of the thesis. I summarise the purpose of the project and present my answers to the research questions.
- Appendices. The appendices include the process of revising my research questions, details concerning the literature review related to Article 2, as well as the phenomenological transcript related to Article 3.



## 1.2. DEMENTIA AND COMPLEX INTERVENTIONS

Dementia is a neurodegenerative syndrome that includes a large number of diseases, for example, Alzheimer's disease, frontal-lobe dementia, and Lewy body dementia. While the diseases are classified differently according to the DSM-5 and ICD 11, they are considered to generally affect memory, thinking, arousal, attention, behaviour, social cognition, and the ability to perform everyday activities negatively (Mikkelsen, 2014; Morandi et al., 2017; WHO, 2019). Worldwide, dementia has a prevalence of nearly 50 million people with an estimated global cost of 818 billion USD out of which approximately 76% relates to family and social costs, depending on country income status, and it is considered the fifth leading cause of death (Nichols et al., 2019; World Health Organization, 2017, 2018). In Denmark it is estimated that almost 90.000 people above the age of 60 has a dementia disease which also affects the lives of 300.000 – 400.000 relatives (NVD, 2019). Behavioural and psychological symptoms of dementia (BPSD) refers to a number of behavioural emotional, and perceptual disturbances that are associated with dementia. They are considered the leading cause of nursing home admission, caregiver (both family and paid) stress, and decreased quality of life as well as contributing to increased financial costs (Baharudin et al., 2019; Cloak & Kalili, 2020; Draper, Finkel, et al., 2012; Grossberg et al., 2012; Kales et al., 2015; Gill Livingston et al., 2014) BPSD can be classified in accordance with five domains: emotional, vegetative, cognitive, motor, and verbal (Cloak & Kalili, 2020). The first three domains represent symptoms of a psychological nature, whereas the remaining two domains represent symptoms of a behavioural nature (Draper, Finkel, et al., 2012). There are multiple aetiologies for BPSD, however several authors propose that a biopsychosocial model should be applied, as factors such as neurological impairment, personal psychology, environmental factors, and interpersonal communication contribute to BPSD (Cloak & Kalili, 2020; Draper, Haupt, et al., 2012; Kales et al., 2015). While BPSD may appear in various degrees from person to person, nearly all persons with a dementia diagnosis exhibit at least one symptom during the course of the disease (Cloak & Kalili, 2020; Draper, Finkel, et al., 2012; Kales et al., 2015).

Even though dementia is caused by different degenerations of the brain (Breedlove & Watson, 2013; Kragh-Sørensen & Lolk, 2010) the ontology of dementia consists of more than apoptosis and atrophy as the symptoms associated with dementia can be affected positively and negatively by ecopsychosocial factors (Zeisel et al., 2016). Indeed, it has even been proposed that BPSD should be thought of as an acronym for *behavioural and psychological signs of distress*, as many of the behaviours can be interpreted as meaningful and appropriate responses to environmental and interpersonal interactions (Sabat, 2006, 2017, 2019). As part of psychologist Tom Kitwood's paradigm-shifting contribution to dementia, he argued that the life-worlds of persons in general (not only persons with dementia) is constructed by an equal interaction between psychological and neurological processes that can be influenced by changes in the brain caused by "internal" disease as well as "external" disease, that

is, eco-psycho-social factors with negative valence. As such, the opposite is assumed to be true as well; that eco-psycho-social factors with a positive valence can impact the brain positively (Kitwood, 2013; Kitwood & Brooker, 2019). Examples supporting this proposition can be seen both in research on childhood neglect and sensory deprivation (Perry, 2002), as well as the impact of “positive emotions” on the prevalence of dementia-related symptoms shown by Danner et al. (2001). Thus, Kitwood challenged the pathological understanding of dementia as a nomothetic and objectified brain disorder and instead offered a *person-centred* understanding. This involves accepting, that persons are unique individuals, that we (i.e., persons) share needs of being socially included, attached, meaningfully employed, having a sense of identity, in need of comfort at times, and, most importantly, being loved, which should be understood as being accepted for who we are. When viewed from a person-centred perspective this implies that the needs of different persons are fulfilled in different ways. In the context of dementia, the need of adapting interventions to suit the individual preferences, abilities and skills are stressed by the NICE-guidelines (NICE, 2016).

As a result of the idiographic nature of dementia when viewed from a person-centred perspective, effective eco-psycho-social interventions (Abraham et al., 2017; Fancourt & Finn, 2019; Livingston et al., 2014; Watt et al., 2019) often resembles what Craig et al. (2008; 2013) describe as *complex interventions*. An intervention can be understood as complex in a number of ways such as, number of interacting components, number of procedures and skill-level required to perform the procedures involved, number of outcomes, and the degree of tailoring and flexibility allowed in the intervention. Indeed, complex interventions might fail if a certain degree of flexibility and tailoring is not allowed. According to Craig et al. (2008) complex interventions should be aimed at a defined population, even though this may vary from a single individual to an entire population, and the intervention should be described fully no matter the level of complexity. This permits valid evaluations, evaluation of treatment fidelity and future implementations. When evaluating complex interventions, it is imperative that the ingredients or mechanisms that make the intervention work are investigated. This allows a better understanding of why an intervention works or fails and re-modelling of the intervention, as required. However, this does not remove the need to evaluate the interventions with regards to effectiveness, as this can provide a basis for deciding whether or not an intervention fails due to genuine ineffectiveness or implementation failures (Craig et al., 2013; Pawson et al., 2004).

### 1.3. PERSONAL MOTIVATION

My first experience of the possibilities of using music as a method in the field of dementia care happened during my internship on the second semester of the music therapy training programme at Aalborg University. I was given the opportunity to follow the work of a music therapist working with persons with dementia and I was

amazed by the major changes and impact the music brought about, and how meaningful and positive interactions could take place. At the time, I was particularly interested in learning neuropsychological theories and my limited knowledge about this at the time presented me with almost clear-cut explanations regarding why these changes took place. My interest at this time did, however, not include a great interest in conducting research, but was instead specifically focused on conducting clinical work. This changed as I had the opportunity to write my bachelor's thesis as a participant in *Solution Hub*, which was a project that sought to match students with "real-world stakeholders". I was matched with a project in Aalborg Municipality that sought to construct and shape a new elder care home for the future – *Fremtidens Plejehjem*. My bachelor thesis had the overall aim of investigating how a music therapist could be implemented in Fremtidens Plejehjem, specifically in relation to persons with dementia (Anderson, 2013). I found that writing a project with the intention of acquiring and constructing applicable knowledge to inform others, greatly motivated me and an interest pursuing a career as a researcher was seeded. While the possibility of enrolling in a 2 + 2 scholarship (i.e., a combination of the master's thesis (two years) and a doctoral study (two years)) was not possible, I applied to participate as a guest at a PhD course at the doctoral programme of music therapy during my master's training which was approved, thankfully.

During the final year of my master's training I got involved in several projects in dementia care. One was focused on providing meaningful activities for persons with dementia and I was employed to provide music on an activity-level in groups and some individual settings. Another was focused on supporting and developing the use of music in care situations and interactions between professional caregivers and persons with dementia. As this was part of my ninth semester internship, I provided music therapy with a treatment focus in both individual and group settings, I provided lectures to the caregivers, and I took part in the project development.

In line with this, the topic of my master's thesis, which was an interdisciplinary group project between music therapy and psychology supervised by professor Hanne Mette Ridder, was an autoethnographic investigation of the use of music, verbal, and non-verbal methods of care in dementia care, specifically used in the context of personal hygiene (Anderson-Ingstrup & Anderson-Ingstrup, 2015). The results included a list of musical, verbal, and non-verbal methods of care as well as a manual suggesting how to most successfully choose between and make use of the different methods.

Following my graduation from the music therapy programme, I was employed at University College Nordjylland (UCN) where parts of my employment was concerned with developing and carrying out projects focusing on elderly and persons with dementia (Anderson-Ingstrup et al., 2016).

The doctoral programme of music therapy hosted a PhD seminar in June 2015 where interested applicants could present suggested projects to enrol in a PhD and receive

feedback from the programme staff. I took this opportunity to present a project concerned with conducting a quantitative investigation of the effect of the verbal, non-verbal, and musical interactions described in my master's thesis, thus once again showing my interest in pursuing a PhD enrolment. The proposal included a rationale for conducting an RCT and reflections concerning dependent variables and outcomes.

It was with great pleasure, therefore, that professor Hanne Mette Ridder later invited me to take part in a project, which has come to be known as the PAMI project, which concerned the development of two types of manual-based interventions that is, PAMI and PAI. I found the topic to be relevance, interesting, and in line with the experience and values my previous work had brought me, including the findings from my master's thesis which were included in the PAMI project description. The pleasure was even greater when the Velux Foundation approved the project application headed by professor Ridder in the end of 2015 and I was given the chance of officially starting my PhD journey in August 2016, after being affiliated from the onset of the PAMI project.

#### **1.4. PAMI GROUP PROJECT**

The funding received from the Velux Foundations included a number of positions. Besides myself, the group has consisted of professor Hanne Mette Ridder, PhD Orii McDermott, Margrete Bach Madsen, and Julie Kolbe Krøier. As such the PAMI project consists of individual, related projects (including my thesis). In this respect, the different projects are framed in relation to the purpose of the PAMI project and are guided by the interests of the researcher or doctoral student running the given project. The initial PAMI project description stated a goal of describing PAMI and PAI and develop a manual suitable for qualifying clinical and care work as well as provide a basis for quantitative research, one strategy being the use of PAI to serve as an active control for the effect of music in PAMI, all with the end purpose of improving the everyday life of persons with dementia living in care home facilities. Simultaneously with the grant for the PAMI project, PhD Aase Marie Ottesen received funding from the Velux Foundation as well for a project with similar aims of constructing manuals regarding the use of song and music in dementia rehabilitation (Ottesen, n.d.). Due to the similarities we often shared and discussed the projects to inform each other and, in the end, qualify the outcomes of the projects.

#### **1.5. PERSON ATTUNED MUSICAL INTERACTIONS**

The overall goal of the PAMI-project was to add to existing dementia care with a biopsychosocial understanding of communication and interaction in person-centred approach. Music therapists are specialised in applying musical interactions and explicate musical components such as rhythm, timing, and tonality and music therapy sessions are based on attuned musical interactions. Knowledge about attuned interactions is highly relevant in dementia care, not only in therapy, but also in

activities and daily care. With this as the starting point, the PAMI group aims to explore and identify the core components for attuned musical interactions and how these interactions are personalised (PAMI Group, n.d.). In this chapter I will present my conceptualisation of PAMI and extracts of the results of an unpublished article concerning *person attuned interaction* (PAI) written by the PAMI group that specifically concerns empathy. I will then link this to Article 1 and present key findings.

My initial conceptualisation of PAMIs was that they are phenomena that occur between individuals. PAMIs are different types of (inter)actions that are attuned to the specific person, one wants to interact with. Within the context of my thesis it is between a person with dementia and a caregiver/professional/relative, and so forth. The caregiver is responsible for the PAMI, that is, they need to pick up and respond to the state of mind and actions of the person with dementia. Attuning involves empathy to enable an understanding of the emotional state of the person with dementia, assessing the persons level of arousal, as well as understanding the person's preferences. This understanding is greatly influenced by the Danish philosopher, Søren Kierkegaard's (1859/1991) description of being a "helper", quoted in the begin of this chapter, where the first and most important place to start is to understand what the other understands. The purpose of PAMIs are to a certain degree non-specific as they can lead to different actions/situations, for example, dancing, taking a shower, getting dressed, chatting, and so forth. Thus, the specific purpose of PAMIs could be understood as the first step in establishing as well as maintaining positive interactions (Kitwood, 2019).

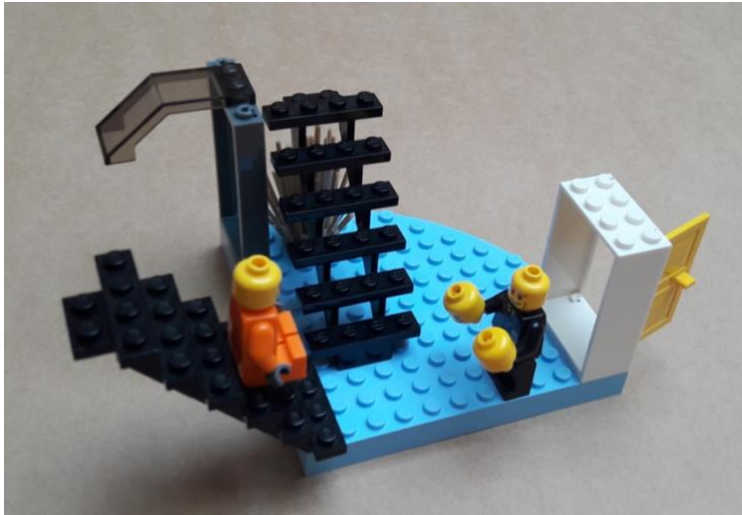
I find that "Musical" communication is a key ingredient in PAMIs. "Musical" can simply be understood as actions such as singing, dancing, and playing instruments, or it can be broadened to also include the musical elements of verbal and non-verbal communication, for example, tone of voice, tempo of talk/movements, dynamics, and so forth. While the appropriateness of adapting the simple or broad definition can be debated, I anticipate that PAMI includes a wide variety of actions applicable to a plethora of interactional situations.

To further develop the conceptualisation of PAMI, the PAMI group conducted an exploration and conceptualisation of PAI through the application of the method Lego Serious Play™ (LEGO, 2019). Details concerning the method and results of the exploration are included in the article by Ridder et al. (2020). As the article is not published at the time of submission of this thesis, I will present some of the results in the following section. This will be limited to the results that stem from my contribution during the Lego Serious Play™ exploration.

The group explored the concept of PAI by sharing and discussing their understandings of the concept. This discussion and co-exploration was assisted by the use of LEGO-bricks as the group individually used bricks to create physical constructs resembling

different concepts related to the phenomenon in question which aided the exploration, communication and discussion of the different concepts. Thus, five categories with sub-categories conceptualising PAI were established in the subsequent analysis of the group-discussion.

One of the constructs I created can be seen below in figure 4.



*Figure 3 LEGO construct resembling "Person Attunement"*

The primary details of the construct include two ladders, one resembling arousal-level and the other the mood of the person with dementia, a LEGO-figure sitting on one of the ladders, resembling the person with dementia, and a LEGO-figure holding different faces in front of a door, resembling the caregiver. The construct illustrates that PAI begins with the caregiver attempting to gain insight into the inner world of the person with dementia by observing the arousal and emotional state of the person with dementia and then, in combination with introspection and knowledge of the functional level and personal preferences of the person with dementia, uses this information to attune his interaction, regarding aspects such as tone of voice, facial expression, verbal-utterances, and so forth. This reflects that empathy is a part of attunement, a connection which also has been stressed by others (Myklebust & Bjørkly, 2019).

Empathy, understood as the process of gaining insight about the emotional state of the person with dementia, has previously been explained with the neuropsychological concept of mirror neurons by Ottesen and Ridder (2012), who proposed using this concept when teaching caregivers about the importance of empathy in their interactions. This was also emphasised in the original PAMI project application as the theory of mirror neurons (Rizzolatti et al., 2006) were suggested as one possible

applicable theory to understand PAI. As part of my employment at UCN, I also taught caregivers different neuropsychological theories that provided them with a neuropsychological explanation of the behaviours they encountered in their work, including the concept of mirror neurons. I also found that this concept often provided a meaningful explanation for the caregivers and as such it seemed like a viable concept to explain and teach a concept such as PAMI. Upon entering the PAMI project, I found it relevant to investigate the concept further by doing a state-of-the-art literature review (Robson & McCartan, 2016) as most of the typically cited literature consist of secondary sources (Bauer, 2006; Cozolino, 2012; Thybo, 2013) and a number of sources criticised both the suggested properties of the mirror neuron system and even the very existence of it (Christodoulou & Gaab, 2009; Jarrett, 2015; Southgate & Hamilton, 2008). While the full details are published in Article 1 of this thesis (Anderson-Ingstrup, 2017), the main results are presented below.

The questions guiding the review were “what parts of the brain contains mirror neurons?” and “do they exist in the human brain?”. I also chose to focus specifically on the topics *empathy*, *imitation*, *autism spectrum disorder*, and *action understanding* as these are topics typically suggested to be connected with and influenced by the mirror neuron network. Out of 79 potential papers, nine were included in the analysis, seven of which were reviews and two were primary studies. The results, relevant to conceptualising PAMI, included that only a single study has been able to demonstrate the existence of neurons showing different mirroring properties in the human brain using a valid method of measurement (Mukamel et al., 2010). The study included 21 patients with pharmacologically intractable epilepsy and the measuring of single neuron activity was conducted while the patients were screened for possible surgical treatment. While the study found that approximately 8% out of the 1177 measured neurons in different cortical areas reacted both when the patients observed or executed a hand grasping or facial expression action, the authors conclude that the results do not demonstrate the function of these neurons, merely their presence. According to Baird et al. (2011) and Lamm and Majdandzic (2015) there is no evidence to support the theory, that empathy is caused by activity in mirror neurons. Based on my review I concluded that concepts such as empathy, turn-taking, and interaction could not be explained satisfactory by theories concerning mirror neurons, as evidence to support this explanation was either lacking or contradicting.

In the following chapter I will present my initial problem statement and research questions and present their final revised form.

## 1.6. PROBLEM STATEMENT AND RESEARCH QUESTIONS

In this section, I will present my initial problem statement and research questions and my final research questions.

The research question is the driving force in a study. It (should) provide(s) a purpose, a context, and more or less directly dictate or suggest one or several methods, as the question or purpose should be of more importance than the method itself (Alvesson & Sandberg, 2013; Darrow, 2016; Robson & McCartan, 2016). At the onset of the project, my first line of goals included research regarding manuals and relevant outcomes to measure PAMI as I anticipated conducting a pilot study. However, as I started working on the project it became clear that some revision was needed to provide clarity in the questions as well as adapting the questions to suit the different “roads” I have followed throughout the project. It has therefor been necessary to revisit and revise the problem statement and research questions several times throughout the process based on continuous reflexivity (Lincoln et al., 2018). However, given the inductive and flexible nature of this project, as well as me being schooled in the philosophy of *problem-based learning*, these revision were not unexpected to appear, but should be seen as an expected and valuable part of the research process (Holgaard et al., 2016; Robson & McCartan, 2016).

The initial problem statement and research questions stated in the PhD proposal were:

**Initial problem statement:** *Which manual-based complex interventions exists that describe methods and ways of being that is used to attune and regulate the arousal level of persons with dementia?*

**Initial research question 1:** *Based on relevant treatment manuals how can a manual frame be defined that is both applicable in clinical and research settings concerning Person Attuned Interaction/Person Attuned Musical Interaction?*

**Initial research question 2:** *Which outcomes are relevant and applicable to measure the effect of Person Attuned Interaction/Person Attuned Musical Interaction?*

Following a number of reflected revisions (see Appendix A), I arrived at the following final three research questions which are related to the topics presented in chapter 1, *PAMI*, *applicability*, and *manuals*:

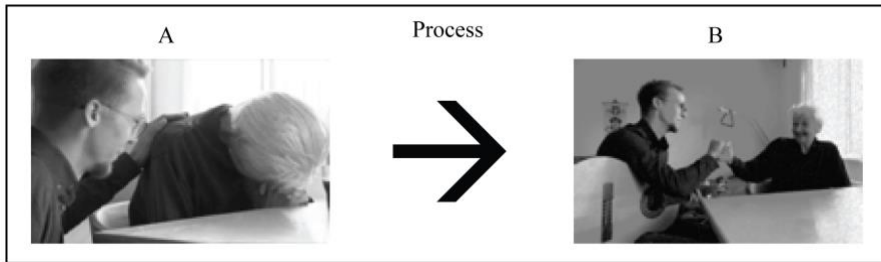


### 1.6.1. FINAL RESEARCH QUESTIONS

**Research question 1:** How can a manual framework be formulated for Person Attuned Musical Interaction to achieve applicability in both clinical and research settings?

**Research question 2:** How are manuals describing complex interventions in dementia care structured and disseminated in refereed journals, and what is important to consider for future manuals?

**Research question 3:** How is music used in the process that ties picture A to picture B, how is this related to the actions of the persons involved, and how does the interaction in picture B differ from picture A?



*Figure 4 Pictorial research question*

## CHAPTER 2. THE ROAD NOT TAKEN

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*“And both that morning equally lay - In leaves no step had  
trodden black. - Oh, I kept the first for another day! - Yet  
knowing how way leads on to way, - I doubted if I should ever  
come back.” (Frost, 1916, 3<sup>rd</sup> verse)*

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As mentioned in chapter 1.6, different roads have been followed from the onset of the project until the end. Even though I did not reach the end of all these roads, some results relevant to the overall project as well as possible future projects were produced. I have chosen to report some of the reflections and findings related to two of these roads: The road towards defining relevant outcomes for testing PAMI and the road towards an ethnographic study of the Danish music therapy profession in dementia care. These preliminary findings will be used to answer research question 1 (see chapter 7).

### 2.1. OUTCOMES

My initial project description included an aim to investigate feasible outcomes to be applied in a pilot study of the first edition of the PAMI manuals. As the use of biometric outcome measures in music therapy and dementia are recommended (Särkämö, 2018; Webster et al., 2017), and I found the area interesting, I chose to investigate the possible application of different biometrical measures such as heart rate variability (HRV), galvanic skin response (GSR), eye-tracking, hormones, neurotransmitters, and brain imaging techniques. Even though they arguably are able to provide more objective measure than, for example, VAS scales, I soon found several issues connected with the use of biometric measures.

The first obstacle I identified regarded lacking the ability to apply for ethical approval to conduct studies that extract information from biometric measures. This was due to the fact that the specific procedure (PAI or PAMI) was not described yet. Neither was the specific measure described. While the construction of the procedure was part of a different project, I continued investigating possible measures and outcomes. This brings me to some of the methodical concerns I met regarding the different biometric measures.

I immediately ruled out intrusive measures as I did not find that the anticipated small number of participants and scope of the anticipated pilot study would justify the potential discomfort associated with these. I then considered some measures of a less intrusive nature; HRV and GSR. However, as these measures mainly provide

information regarding the participant's level of arousal without giving information regarding the hedonic level of the participant, they alone would not be able to show if a participant reacts positively or negatively to a procedure (iMotions, 2015). Thus, the interpretation of the data from these measures should be considered in relation to another type of data.

Following this, I investigated the possibility of applying eye-tracking and facial expression analysis. The main purpose of eye-tracking is to provide data concerning where the participant is looking which is suggested to be a proxy measure of interest. This method either requires the participant to sit in front of a monitor with an eye-tracking device attached to the monitor or the participant must wear special glasses capable of capturing the participant's gaze (iMotions, 2016b). Facial expression analysis measures the combination and occurrence of *action units*, that is, activity in single muscles and muscle groups in the face. This data can be synthesised and interpreted to measure the emotional reactions in the participant. It requires a video recording of the participant's face of a relative high quality and requires participant's face angle to not exceed  $\pm 20$  degrees from the camera. Thus, it is recommended to record the data by placing the participant in front of a monitor onto which different stimuli can be presented (iMotions, 2016c). Depending on the final purpose and hypothesised mechanisms of PAMI, a combination of the above mentioned measures could be applied to investigate the level of arousal, interest, and emotional state of a person with dementia. However, obvious limitations include the willingness of a person with severe dementia to actually wear the different devices or for PAMI to be delivered effectively via a monitor.

Finally, I considered the application of Electroencephalography (EEG) as a relatively non-intrusive brain imaging technique. EEG measures changes in the electrical current of the cortex. This type of brain imaging has a high temporal resolution but a relatively low spatial resolution. As such, it is not the most suitable method to measure activity in subcortical areas. It is, however, possible to measure changes in activity in the prefrontal cortex, which could indicate changes in mood, motivation, and arousal. EEG measures are divided into different categories: Event-related potential (ERP), Frequency based EEG (FB), Frontal asymmetry (FA) or cognitive-affective metrics (CAM). The measure potentially most relevant for a pilot study of PAMI is FA as this measure only requires a small amount of electrodes and it is used to measure the degree of attraction/motivation and repulsion in the wearer (iMotions, 2016a). However, a number of methodical challenges are associated with the use of EEG. A typical research grade EEG device resembles a swimming cap that the participant must wear. The electrodes also typically need to be lubricated with a gel. This could cause potential issues when attempting to apply this to a person with severe dementia. However, EEG devices also come in the shape of a crest or an in-ear device. The crest shaped device (e.g., the EPOC (Emotiv, 2020)) has fewer electrodes than the swimming cap shaped device, the electrodes being mainly positioned to register activity in the frontal lobe. While this device may be less confining than the swimming

cap-style EEG, the quality of the readings is lower. The in-ear device resembles a large hearing aid device, but as it also requires lubrication it might not be welcomed by a person with severe dementia. Also, this device is limited to registering activity in the cortex near the ears.

Beside the potential difficulties associated with asking a person with severe dementia to wear the devices, there is another limitation relevant when considering EEG as a measure in a situation of interaction, which PAMI is anticipated to be. This difficulty lies in the fact that the EEG registers electrical activity and does not differentiate between electrical activity stemming from the cortex or muscle activity (e.g., eye-movements, mouth-movements, swallowing, etc.). Thus, this may limit the potential applicability of EEG to measure activity during PAMI. However, recent studies applying dual-EEG in studies concerning the brain patterns of a client and music therapist in a guided imagery and music session, as well as the patterns of a music therapist and person with dementia in a mild or moderate state during musical improvisation suggest that EEG still might be a feasible approach to measure the effect of PAMI (Fachner et al., 2019; Maidhof et al., 2019).

One last example of a biometric measure of possible relevance is the use of dyadic functional MRI (dfMRI) that has been developed specifically with the aim of investigating social interaction (Lee et al., 2012). The procedure enables two persons to lie on their side face to face in a fMRI scanner, thus enabling them to interact. This also means, that the participants will be facing each other with an approximate distance of some 10-20cm apart while their heads are locked in place in the relatively loud fMRI scanner. While the procedure may produce data that can investigate neural activity associated with social interaction, there are some obvious possible challenges in applying this method to investigate PAMI with a person with severe dementia.

Taken together, the application of biometrics as an outcome for measuring the effect of PAMI was not one without limitations, another noticeable limitation being the cost of research grade equipment. However, as the structure and directions of the overall project changed, it became apparent that it would not be feasible to conduct a pilot study within the time frame of my fellowship and the road concerning outcomes was thus abandoned.

## **2.2. ETHNOGRAPHY**

During the unfolding of the PAMI project the PAMI group's conceptualisation of PAMI had changed from a set of eight musical activities as described in the original project description to a general way of interacting "musically" with others. As such, PAMI was expected to be part of what music therapists do and also something, that others should be able to do. This made me question what is unique to music therapy? Where is the line between PAMI and music therapeutic activities that require music therapeutic training? I soon found that this question was in line with another question

being posed at the time: “When and where is a music therapist needed?” (Hsu, 2017; Melhuish, 2017; Odell-Miller, 2017a, 2017b; Strange et al., 2017). As interest in music therapy was rising it was (and still is) highly relevant to provide decision-makers, the public, other professions related to music therapy, and music therapists themselves with an updated answer to this question.

To explore possible answers to the question of when and where music therapists are needed in the field of dementia, I began preparing an ethnographic study in Denmark. This would provide information that could feed back into the PAMI project by describing activities that different from PAMIs. Potentially, it could also inform future clinical guidelines or quantitative studies. I conducted a literature review where I included all articles published in the Danish Journal of Music Therapy concerning the subjects *geriatrics* or *dementia* for a full text read. Out of 22 papers that were published in the period 2004 – 2017, 12 were of relevance. I then conducted a content analysis of the papers to extract information about where, when, how, and why music therapists were working according to this body of knowledge. This included information regarding music, the competencies of music therapists, clinical goals, and the music therapist as an educator of caregivers in the use of music.

I also conducted an interview with the head of a Danish nursing home, that profiles itself as being a “musical nursing home” meaning that music should always be considered as a relevant tool by all employees. The head of nursing home had a clear, three levelled pyramid-shaped model detailing who would use music for what. This model included a base level where all staff should use music as part of their daily routine, a mid-level where musicians and similar professions would use music as a part time activity with some persons with dementia, and, finally, a top-level where music therapist would use music to provide therapy. The purpose of this interview was to gain insight into the understanding of what differed when the line from the mid- to the top area of the pyramid was crossed, that is, what were the situations that required a music therapist in this setting. In combination with the information from the literature review this would provide a foundation for further field studies.

Another step in the study preparation was to map the “population” of music therapists working in the field of dementia in Denmark (Anderson-Ingstrup, 2019). The purpose of this was partially to serve as a map to plan field studies, but also to serve as a dissemination tool to anyone who might benefit from knowing the population of music therapist in the field of dementia in Denmark. The data was collected by inviting music therapist working in dementia care to inform me of their place of work, type of employment, and the number of hours tied to their position. This invitation was given at a network meeting for Danish music therapists in dementia care as well as via email sent out the members of the Danish music therapy association. As I did not receive a response from all of the invited, the map is to some degree underpopulated. It does, however, suggest that there is not equal access to music therapy across the municipalities of Denmark (see figure 5).

## Musikterapeuter i demensomsorgen 2019

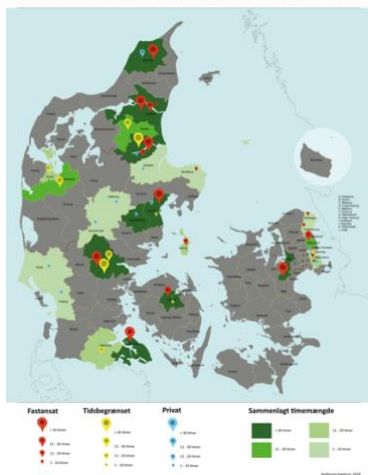


Figure 5 Map of Danish music therapy positions in dementia care

In order to continue the investigation of when PAMI becomes something that requires music therapeutic training, the study could continue in a number of directions, ranging from observing and analysing a large number of clinical sessions in order to map clinical methods and goals, to portraying music therapists in their work context, applying the method of portraiture (Cope, Jones, & Hendricks, 2016; Cope, Jones, & Hendricks, 2015; Hill-Brisbane, 2008; Lawrence-Lightfoot, 2005). The journey down the ethnographic road was, however, abandoned due to the fact, that time was becoming a factor, and instead I began working with the video material presented in Article 3. I still find this study important, and I hope I will be able to continue the work in this area at another time as the line between situations of PAMI that does or does not require music therapeutic training remains ill-defined.

## CHAPTER 3. METHODOLOGY

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*“Calvin: I need to get a heart rate monitor. Hobbes: What for?  
C: To make sure I’m chewing at my aerobic threshold! Every  
day I want to see that I’m chewing more gum faster, harder  
and longer! H: What’s the point of attaching a number to  
everything you do? C: If your numbers go up, it means you’re  
having more fun. H: Science to the spirit’s rescue once again.”*  
(Watterson, 1995, April 27)

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In this chapter I will introduce my epistemological standpoint and methodology concerning the methods applied both in the articles and in this linking text. Finally, I will present my ethical reflections as well as the obtained ethical approvals.

With Calvin and Hobbes’ dialogue concerning science, in the shape of numbers coming to the spirit’s rescue, Waterson illustrates what Robson and McCartan (2016) calls a fight between warring tribes between quantitative and qualitative epistemologies, which also has been referred to as the paradigm wars (Denzin & Lincoln, 2018). In the field of music therapy research the distinction between quantitative and qualitative approaches has changed name to objectivist and interpretivist research (Wheeler & Bruscia, 2016). While the “old” names implied the type of data considered relevant for the approach, the new names imply the type of knowledge acquired by the approach (even though one could argue that data obtained in objectivist studies require interpretation as well). Another approach to science belonging to a realist paradigm, which I follow in this thesis, is suggested by Robson and McCartan (2016) who differentiate between a fixed or flexible approach and relate this to real-world research.

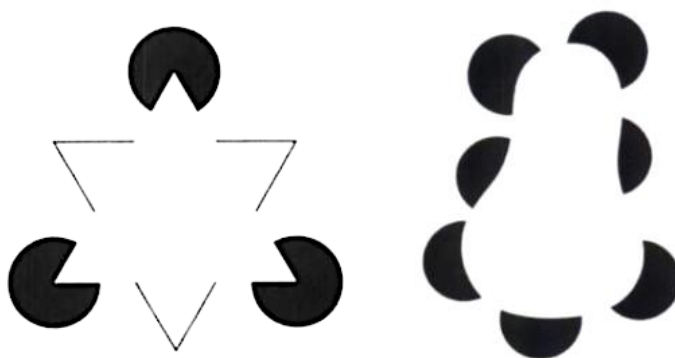
### 3.1. REALIST PARADIGM

According to Robson and McCartan (2016) real-world research is a type of applied or social research that typically distinguishes from basic research in a number of ways such as field work vs lab work, focus on solving problems vs focus on gaining knowledge, and being oriented towards needs of a population vs needs of academic peers. While abiding to a finite set of research methods and rules (e.g., only accepting “systematic” as in “quantitative” and “objective” methods) can negatively impact the scope and qualities of real-world research, Robson and McCartan argues that any project needs to be carried out with a *scientific attitude*. This involves being *systematic*, that is, being reflexive and explicit, *skeptical*, that is, not taking findings as obvious truths but being open towards other explanations, and *ethical*, that is,

ensuring the interests and concerns of involved parties and those possibly affected by the outcomes of the research. As mentioned, Robson and McCartan distinguish between two overall approaches; a fixed approach and a flexible approach. Thus, the differentiation between these approaches does not concern the type of data (quantitative vs qualitative) specifically, but instead it concerns and validates that while some research objectives are achieved by following pre-defined and fixed strategies (e.g., hypothesis testing), other objectives that does not concern testing of pre-established theories need more flexible strategies that allow adoptions throughout the process and re-shaping of the design in accordance with findings to ensure that the most relevant knowledge can be obtained (e.g., explorative studies).

Providing a context for the epistemology of real-world research one can observe other paradigms, that is, modernism and post-modernism. Robson and McCartan (2016) propose modernism as a title enwrapping traditions such as empiricism, positivism, and critical rationalism in which lies a general belief of the world as an objective, observable object existing “beyond” the senses and perception of the human mind. Post-modernism holds the view that knowledge and results can be influenced by the researcher and that reality can only be known partially. Challenging the idea of a general and objective reality is found within social constructionism in which reality is a constructed product based on interactions. Thus, there is not only “one reality” but, in principle, as many realities as there are people.

An interesting phenomenon supporting the notion of a constructed reality can be observed in the optical illusion known as “Kanizsa’s triangle” (Kanizsa, 1955) where the observer perceives a triangle that, physically, is not there. The illusion is even achievable with different shapes (see figure 6).



*Figure 6 From Weibel (2005), p. 114*



While this phenomenon alone neither rejects nor confirms the aforementioned perspectives, it serves as a demonstration of how perception can influence what one could call “reality”. As the observer can see the triangle (or other shapes) does it then exist? Anticipating that several observers will be able to see the shape, is it then objectively true that it exists?

Rather than deciding on what perspective holds the “truest truth”, I consider the different epistemologies and associated methods as being capable of capturing different types of knowledge. Depending on the purpose of a study, one approach might yield more meaningful knowledge than another and in some scenarios a combination of approaches could result in gaining a fuller knowledge (Sonne-Ragans, 2015).

This perspective is in line with the realist view of science, where the main concern is to investigate “what works for whom, under what circumstances, in what context?” (Pawson et al., 2004). While this perspective could arguably be employed when discussing epistemology, it is typically related to researching and developing interventions. It anticipates, that causality is not simply that A causes B, but that this happens under certain conditions that can affect this causality. Robson and McCartan (2016) illustrate this with the “gunpowder example” which concerns the operational properties of gunpowder. Adding a flame to gunpowder will make the gunpowder explode *if* certain conditions are met (e.g., the gunpowder being dry and being of the correct chemical composition). This illustrates that the realist perspective includes investigating and understanding the *context* in which an intervention is applied as well as the *mechanisms* that constitute the intervention. The realist perspective also anticipates an idiographic adaption of interventions rather than a nomothetic (Pawson et al., 2005). While the degree of adaptation might vary, following the realist perspective one would assume that a successful intervention needs to be adapted to fit the system or the individual, it seeks to affect. This perspective is in line with the person-centred philosophy of care advocated by Kitwood (2013; Kitwood & Brooker, 2019) and also follows Kierkegaard’s idea of being a “helper” (1859/1991). Each individual must be acknowledged and recognised as a “person” with a unique set of beliefs, values, preferences, and understandings, which the helper should strive to understand and adapt to.

Bringing treatment manuals into play, the interest in uncovering mechanisms is also shared by Levy-Storms et al. (2016) who argue, that this perspective could be of more importance in order to strengthen the evidence-based curricula concerning communication and interpersonal skills in dementia care than adapting a perspective that merely focus on outcomes. This shift from an outcome-focus to a focus on mechanisms is the purpose in *realist evaluation*, which the next subchapter will describe.

### 3.1.1. REALIST EVALUATION

Realist evaluation or synthesis is an approach to analyse evidence on complex social interventions, with the aim of providing information on how and when they do and do not work in specific contexts or settings (Pawson et al., 2004, 2005). Pawson and Tilley (2004) address “interventions” as “programmes” and stress, that programmes are *theories*, they are *imbedded* in social systems, they need *active* participants, and they are *open* and can change form.

Due to this, a typical review that simply measures whether an intervention works or not, often ends up concluding “maybe” and “sometimes”. This information does not answer when or how an intervention works. Realist reviews implore the reviewer to make clear the underlying assumptions of how an intervention works, that is, the *programme theory*, and gather and use evidence to refine this theory. Due to the fact that interventions seldom are implemented in the same way by and with the same people in the same context, finding universal truths are less important than explaining the mechanisms of an intervention. That is, seeking answers to the “realist question” of “what works for whom, under what circumstances, in what context?” (Pawson et al., 2004). In order to address this question and break down programmes, realist evaluation focus on the following four linked concepts: *mechanism*, *context*, *outcome*, and *context-mechanism-outcome pattern configuration* (CMOC) (Pawson & Tilley, 2004).

#### **Mechanism**

Mechanisms describe what it is in a programme that brings about an effect. Programmes offer resources (to people) that make them work = a mechanism. A programme can contain many mechanisms. A programme can also contain many components and each of these will have a subset of mechanisms. The reviewer must posit different (but not necessarily finite) proposals of mechanisms that may make a programme work.

#### **Context**

It is assumed that mechanism will work differently according to what context they are implemented in. Some contexts might strengthen the function of the mechanisms, others might inhibit them. The concept of “context” provides a realist solution to the “panacea problem” as it is axiomatic that contexts influence mechanisms differently. It is important to notice that *context*  $\neq$  *locality*. Instead, it refers to a broader array of variables such as life worlds of individual persons, relationships, biology, technology, economics, and so forth.

#### **Outcome**

Due to the anticipated variability in contexts and active mechanisms, programmes will produce different (intended and unintended/-expected) outcomes. Realist evaluation

does not rely on a single outcome measure to bring about pass or fail verdict on a programme.

## CMOC

When it comes to Context-Mechanism-Outcome pattern Configuration (CMOC), outcome variations are expected during any large (or small) scale intervention and the realist evaluation does not seek to answer the question of “finding the treatment X that cures the problem Y”. Instead the variations and the explanations concerning these are key areas of focus.

CMOC are models that describe how programmes activate mechanisms with who and under what conditions to bring about changes/outcomes. This leads to mechanism-variations and context-variations that can predict and explain outcome-variations. Thus, the findings of realist evaluation seek to pinpoint the configuration of features that are needed to sustain a programme.

This is somewhat similar to cooking by following a recipe. The recipe “works” when the right ingredients are combined in the right amount to produce a meal that suits the consumer’s taste. An effective programme also needs to have the right ingredients in place at the right time, in the right context to meet a set of particular needs.

As stated above, the primary result of a realist evaluation is to present CMOCs. A “translation” of this is illustrated by Pawson et al. (2004), showing how the outcome of realist evaluation can inform decisionmakers:

A review should find me a list of generalisable principles of any effective programme of this kind, and I will then try to design them into the initiative I am planning [. . .] Show me the options and explain the main considerations I should take into account in choosing between them. (pp. 3-4)

Thus, the conclusion of a realist review is not a list of interventions ranked by how much they “worked”. Instead the conclusion should be a presentation of the programme theory and the mechanisms of the reviewed interventions together with an informed understanding of how they can be improved. It begins with theory and ends with theory. This all leads back to presenting answers the question of “WHAT is it about this kind of intervention that works, for WHOM, in what CIRCUMSTANCES, in what RESPECTS and WHY?” (Pawson et al., 2004, p. 25).

The purpose of conducting a realist evaluation influences this thesis, as I will not attempt to provide a finite answer regarding the “perfect” manual. Assuming that a manual, like the intervention, needs to be constructed to fit a specific purpose and context, it is more valuable to discuss the mechanisms of a manual and informing future developers of manuals by aiding them in deciding how a manual should be constructed to best suit their given context. When considering the PAMI manual, it

thus becomes relevant to investigate and discuss the possible CMOC related to the given content, context, and users, which I will do in chapter 5 and 6.

### 3.2. ETHICS

A main purpose of ethics in a research study is to ensure that participants taking part in a study will not be affected negatively by the procedures involved. It also includes considering how the reporting of results may affect participants, securing anonymity as well as stress how the study might empower or benefit the participants, both considering the procedures as well as the reporting of results. This also extends beyond micro-ethics, that is, ethics concerning the specific person, to macro-ethics concerning the possible influence of the research on a societal level (Brinkmann, 2015; Stige et al., 2009).

Ethics exemption for the PAMI project in general was granted by Den Videnskabetiske Komité for Region Nordjylland, as well as being registered at The Danish Data Protection Agency through Aalborg University. Ethical approval concerning the recording, production and publication of the documentary mentioned in Article 3 was obtained by the journalist (see chapter 4). Later, I obtained further ethical approval to use the raw recordings in research and educational settings.

However, ethical considerations regarding this thesis has not been a tick on a checklist. While it is important to obtain these formal approvals, this does not mean that reflecting on possible ethical consequences has stopped. On the contrary, ethical considerations has remained an important factor both on a micro- and macrolevel.

On this note, I would like to present reflections concerning the choice of using the real name of the person with dementia, presented in Article 3. Even though the real names were used in the published documentary and ethical approval for this was granted, I carefully considered the possible private nature of the music therapy session analysed. I did not, however, find that the material portrayed the participant negatively, demeaning or in other ways exposing. On the contrary, I found that the possibility of using the real name underscored the person-centred perspective underlying the session, as well as the axiology upon which this thesis is based, whereas in this case, the obscuring of her name did not serve any particular end. Thus, by using her real name I attempt to promote the *person* involved by abstaining from manipulating the part of her identity that is her name. In the next chapter I will present reflections regarding the methods applied in Article 3 as well as summarising the main results of that article.

## CHAPTER 4. VIDEO ANALYSIS

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*“Sherlock Holmes: You have frequently seen the steps which lead up from the hall to this room. Dr. Watson: Frequently. SH: How often? DW: Well, some hundreds of times. SH: Then how many are there? DW: How many! I don’t know. SH: Quite so! You have not observed. And yet you have seen.” (Doyle, 2013, p. 164)*

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This chapter contains expanded reflections regarding choices concerning the methods applied in Article 3 as well as a short summary of the results. Article 3 concerns an analysis of a music therapy session including a music therapist (myself) and a person with severe dementia (Else). The data stems from recordings carried out by journalist Majbrit Oddershede Pedersen to provide footage for a Danish documentary called “The Sound of Life” (in Danish “Lyden af liv”) (Pedersen, 2017a, 2017b, 2017c). While ethical exemption has been granted to use and display the raw video footage for research and training purposes, it has not been made publicly available.

The quote opening this chapter presents Sherlock Holmes explaining some of the mechanisms involved in his deductive method to Dr. Watson, one of these being the ability to *observe* rather than *see*. The difference between seeing and observing includes shifting from a passive to an active state where one pays specific attention to details relevant to the task at hand. It also means paying less attention to irrelevant details as the attention span of the human mind is limited (Plude et al., 1994). However, this may also lead to relevant information being missed. This limitation is, however, to some extent combatable by recording the content of situations, for example, by the means of audio/visual equipment as this brings about the possibility of replaying the record, thus enabling in-depth analysis of the recordings (Jordan & Henderson, 1995). There is a number of approaches applicable in analysing video data with a qualitative scope (Margolis & Zunjarwad, 2018). As the analysis conducted in Article 3 is concerned with the interactions of, and communication between the participants involved, the analysis was based on the tradition of conversation analysis (CA) where a main focus is on analysing the details of social interaction (Heath et al., 2010). In the field of music therapy this resembles *microanalysis*, which Wosch & Wigram (2007) define as a method for investigating *microprocesses* which are events occurring within a music therapy session. A microprocess can temporally stretch from a minute to a full session. In line with CA, microanalysis can involve the utilisation of a number of different methods, depending on the purpose of the analysis and the data involved. While I adapted my methods to specifically suit the data and purpose of Article 3, some methods with a certain degree of similarity to the different methods

applied in Article 3 has been described by others (Baker, 2007; Erkkilä, 2007; Holck, 2007; Ridder, 2007). My methods of analysing the data included a phenomenological transcript, a manual calculation of the beats per minute (BPM) in the musical parts of the recording, a detailed analysis of the vocal parts of the data using the software Melodyne (Celemony, 2019a), a sequential analysis using the software ELAN, and a synthesis of the different data pieces, which included the construction of transcripts by using Adobe Illustrator.

## 4.1. TRANSCRIPTION IN CONVERSATION ANALYSIS

CA includes not only the verbal communication between participants in an analysis but also different non-verbal action, for example, movements of the body, intonation, prosody, pauses, and interaction with objects when they are relevant to the aims of a given study (Heath et al., 2010). Thus, Luff and Heath (2015) argues, that a transcription-style should be developed to best suit the purpose of a given study. As a result, there is some degree of variation in the style of transcription in different studies. I will exemplify this by referring to Cekaite (2010), Mondada (2018, 2019), and Schneider et al. (2018) as they either emphasise non-verbal communication, dementia, and/or address transcription methods specifically. While all authors include a transcript consisting of a prose text and still-frames from the video excerpt (in either colour, mono-chromatic, or pen-style), the order of how this is presented differs. Mondada (2018, 2019) follows the following formula:

- First: A CA transcript, that consist of codes.
- Second: Still-frames are presented that relate to the transcript and named “Fig. x”.
- Third: A prose description of what happened in the excerpt. This description is not “pure-descriptive” but includes explanations as well as references.
- The next sequence is presented following the same formula. This continues until the entire excerpt has been presented.

Cekaite (2010) and Schneider et al. (2018) provides the same content, albeit in a less consistent way. While this concerns the “layout” of the analysis, there are also noticeable difference between the coding styles of the transcription. Mondada (2018, 2019) has a coding style that captures temporality, voice texture, movement, and words in a high level of temporal detail, constructed within the limits of a text-based document. The temporal detail applied by Cekaite (2010) and Schneider et al. (2018) is lower, as is the detail of movement transcriptions. Thus, Cekaite (2010) includes movements as a “transcriber comment” and Schneider et al. (2018) does not include it in the transcript, but only in the prose text.

This indicates some freedom concerning both “layout”- and “coding” style in CA. The similarities being the inclusion of a *written* transcript (i.e., not screenshots or other images from ELAN), the use of still-frames to provide some explanation to the reader,

and that the prose text is not strictly descriptive but also explaining and referencing other literature. This observation is in line with Davidsen and Kjær (2018) who concurs that there is not a generally accepted system for the transcription of social actions, and that the transcription should always be adjusted to suit the demands put forward by the data, the research purpose, theoretical understanding, and the readers of the research.

The activities transcribed in Article 3 does not include a standard, verbalised turn-taking dialogue. Only one participant, the music therapist, is considered “verbal”. Both use gestures, facial expressions, and vocalisations (laughter and song). This makes the material different from a typical dataset analysed using CA, which would involve a greater amount of verbal utterances, dialogue, and body language (Heath et al., 2010).

Mondada (2018) highlights two studies where activities with little or no talk has been transcribed (Ivarsson & Greiffenhagen, 2015; Lerner & Zimmerman, 2002). The former study is concerned with skaters riding in a pool and how they non-verbally are able to conduct turn-taking and the latter shows how pre-verbal children communicate with peers through body language and vocalizations. Based on an undescribed literature review, Schneider et al. (2018) argues that there is little research in the field of dementia that has investigated non-verbal communication in the frame of CA.

I took the apparent differences between the presented publications as a demonstration of the legality of adapting or developing the transcription style to best suit the aim of a given study, as already stated by Davidsen and Kjær (2018) and Luff and Heath (2015), which also is in line with the flexible, realist approach described in chapter 3 (Robson & McCartan, 2016). The next chapter will present some of my reflections developing and adapting the transcription style presented in Article 3.

## **4.2. ANALYSING AND TRANSCRIBING MUSICAL ELEMENTS**

As stated in Article 3, the main communicative media in the case is song and music. A standard transcription of words, including notations concerning pauses in speech and prosodic direction, would not suffice to analyse the musical content. Instead, I chose to apply methods that would specifically target musical elements. While some information concerning the choice of methods is available in article 3, I will use this chapter to broaden the reflections concerning the steps taken when calculating the BPM in the session and using Melodyne (Celemony, 2019a) as a research tool.

### **4.2.1. BPM CALCULATION**

As the tempo in the music therapy session described in Article 3 varied a lot, I was interested in charting the BPM. As described in Article 3 this was done manually by watching the recording of the session while tapping the perceived tempo on a

metronome app installed on my smartphone. As the app did not provide a recording feature, I positioned a camera that could record the screen of the smartphone. I then watched this recording second-by-second and entered the tempo into a timeline constructed in Excel. The timeline was separated using the scenes defined in the phenomenological transcription (see appendix D). Later, I was introduced to the software MATLAB and the MIR-toolbox (Lartillot et al., 2019) which, amongst other features, are capable of calculating different musical parameters, including BPM. Where the manual calculation lasted hours (length of the session recording + constructing timeline + second-by-second watching) this calculation could be done in a matter of seconds using MATLAB. Illustrated in figure 7, the results were, however, not completely alike.

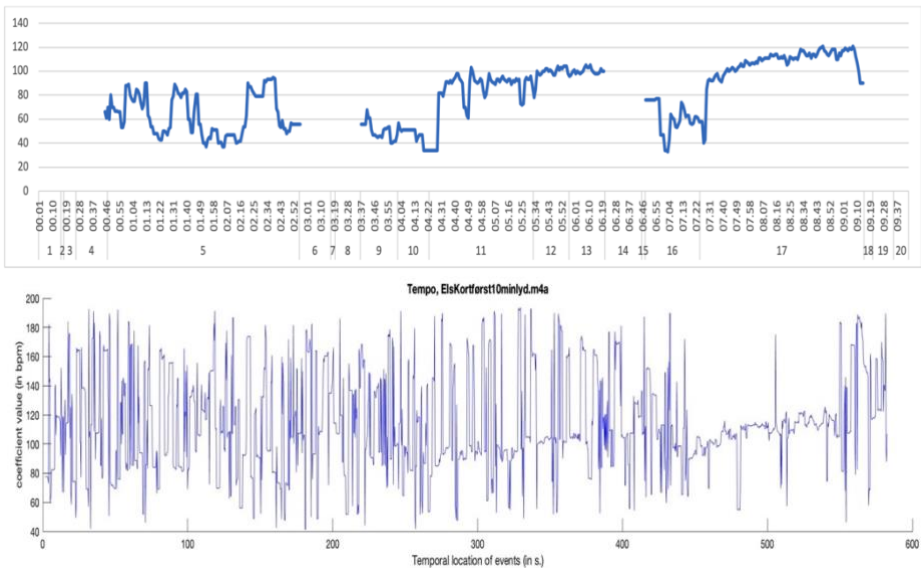


Figure 7 BPM graphs created in Excel vs MATLAB

While a regression analysis of both graphs may show graphs more alike, the main source of difference may be found in the fact that the recording includes a number of non-musical excerpts without BPM, but with sounds. If the data was cleaned up by removing the passages without BPM or the graph was created by an experienced MATLAB user, the curve created in MATLAB might also have had less noise. While the use of MATLAB comes with relative ease, it did not seem to be more useful in analysing the material. Indeed, as some parts of the recording include passages that could be counted in either common or cut time, the perception of this will influence the graphs. Thus, it could be possible that the human perception, and calculation, could differ from the computer-generated calculation.



## 4.2.2. APPLYING MELODYNE IN RESEARCH

Melodyne is a software tool developed by Celemony (2019a) and it is capable of editing recorded music specifically regarding the single notes in a recording. While this editing is relatively easily done if the signal has come from a MIDI instrument, this is not the case when speaking of music from “real” instruments. Headed by Peter Neubäcker, musician and mathematician, the development of Melodyne included constructing algorithms that allowed the extraction and separation of single notes in both mono- and polyphonic recordings, and enabled editing many musical parameters, for example, pitch, length, volume, and temporal positioning (Celemony, 2019b).

Despite being developed as a tool for the music industry, a number of peer-reviewed studies has used Melodyne for editing musical parameters in recordings applied in a study (Aharoni & Fridlund, 2007; Barranco-Droege, 2015; Livingstone & Russo, 2018; Sundberg et al., 2013), analysing the pitch range of toddlers (Gudmundsdottir & Trehub, 2018), counting tones in recordings (Heaton et al., 2008), and manipulating spoken words to be perceived as sung words (Hall & Prior, 2018). In this thesis, the purpose of utilising Melodyne was to illustrate and analyse the relation between the vocalisations of the participants in Article 3 and to serve as a canvas onto which transcriptions of vocalisations, body movements, and screenshots from the video material could be overlaid in order to produce a detailed yet simple transcription.

To prepare the data for analysis, an excerpt of 9 min and 44 sec was extracted from the original video file by cutting the length of the clip in iMovie. The original format was .mp4 and this was also the format used to save the excerpt. Afterwards, the sound was extracted from the excerpt using Quicktime. This was saved as .m4a. Even though this is not a *loss-less* format such as .flac or .aif, I chose this format partially because this was more compatible with Melodyne and because the original format was not in a loss-less format either (Davidsen & Kjær, 2018). In an attempt to simplify the analysis, the exported sound file was segmented in Wavepad (NCH, 2019). These segments were not saved in loss-less formats, due to the same reasons stated previously, but were instead saved both in .mp3 and .m4a in order to examine which format would provide the best material for further analysis. To test this, two segments of the same piece of audio were imported into Melodyne resulting in two different renderings (see figure 8 on the following page).

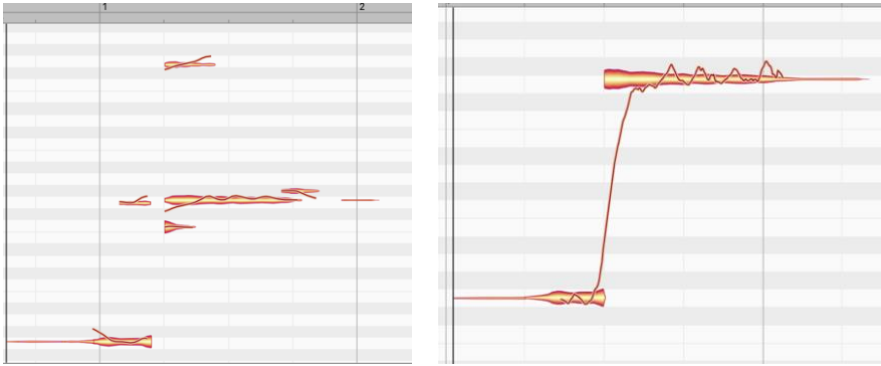


Figure 8 Screenshot from Melodyne. Difference between importing files in .mp3 or .m4a format

The image on the left in figure 8 is the output of the piece in .mp3. This produced a scattered rendition of the audio compared to the image on the right in .m4a format. Due to this, .m4a was the primary choice for further analysis.

The first transcriptions were carried out using the segmented audio files. Screenshots from Melodyne were imported into Adobe Illustrator where coloured boxes, name tags, and transcriptions were added.

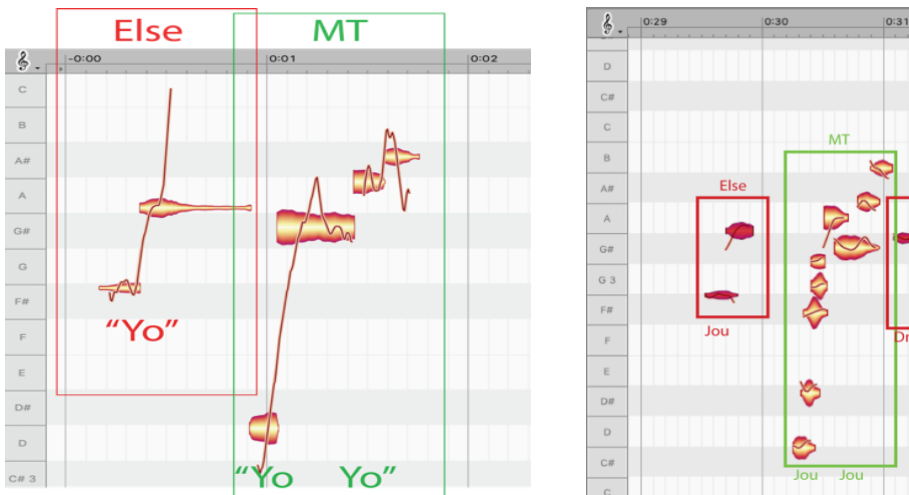


Figure 9 Screenshot from Melodyne with annotations added in Adobe Illustrator

Figure 9 above shows two examples of an analysis of the same part of the recording. They both show the audio in relation to pitch, temporal position, length, legato movements, and vibrato qualities. In the first example (the picture on the left) the timeline begins at 0:00, as this came from the segmented audio. I found, however, that the incongruity between this timeline and the actual timeline from the video material

obscured the connection between the data constructed in Melodyne and the other data types. In order to rectify this incongruency, I chose to import the extracted audio from the full excerpt into Melodyne. However, this changed the rendition of the audio as legato movements were rendered scattered and less connected, as shown in the example on the right in figure 9. I still found the alignment between the timeline in the video and Melodyne to be of most importance and therefore conducted the analysis using the full excerpt. Another difference visible in the example on the right is that I marked the notes belonging to Else in Melodyne to enhance the visualisation of which notes belonged to who.

### 4.3. MAIN FINDINGS IN ARTICLE 3

Some of the main findings from Article 3 includes a description of how different musical elements are used in what was identified as a *Person Attuned Musical Arousal Regulation* (PAMAR) process as well as during a PAMI. This includes a number of tempo variations and improvisational methods applied both as an attempt to establish interaction and during a period of reciprocal interaction. The tempo variations include variations in the overall BPM during the process, steep drops and rises of BPM, and pauses. The improvisational methods include mirroring, imitation, copying, and matching (Wigram, 2004). These findings connect with the PAMI project by detailing how much variety can occur in attempting attuned regulation and -interaction as well as some specific actions applicable within this framework. Also, the method involved in analysing the data could serve as a way to extract and construct explanatory content to be used in a manual.

## CHAPTER 5. MANUALS

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*“Sirius and Lupin had given Harry a set of excellent books entitled Practical Defensive Magic and its use Against the Dark Arts, which had superb, moving colour illustrations of all the counter-jinxes and hexes described.” (Rowling, 2003, p. 443)*

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This chapter adds on to the results presented in Article 2. I open the chapter with a discussion of the ontology and possible purpose of manuals. I then introduce a number of manuals created within the context of music therapy which I use to present my initial exploration of the concept “flexibility” within manuals as well as present different types of manual frameworks. The chapter is rounded off with a realist exploration of different mechanisms that possibly influence the appropriateness of a manual given the particular context it is meant to operate in.

### 5.1. THE ONTOLOGY OF A MANUAL

The quote in the beginning of this chapter is from one of the popular books about the young wizard, Harry Potter. It presents an example of a manual that provides instructions on how to perform actions that involve motion, state of mind and verbal elements needed to achieve the desired action. Having “*moving colour illustrations*” gives the reader of the manual a greater possibility to understand how the actions should be executed as compared to relying on non-animated illustrations or text only. Using animation to describe motion allows for a great amount of information to be conveyed in a short amount of time without much need for the reader to struggle with understanding. As the successful execution of the manual’s content, that is, hexes and counter-jinxes, rely heavily upon specific movements, it is necessary to disseminate this to the reader. If the manual did not include moving images, the reader would be left with either a lack of explanation or perhaps incomprehensive directions such as “move the wand in an o-motion” or “hold the wand in an 87° angle from the body, maintain the upper arm still while flexing the underarm circularly with a velocity of 1.37km/h”. However, as the pronunciation of a given spell in the Harry Potter universe also needs to be done correctly, the manual is lacking the modality of sound. Thus, there seems to be room for improvement in the magical world of spell-books.

Can a fictive spell-book, however, be characterised as a manual? According to a number of dictionaries, a manual can be defined as a book or a guide that gives useful information about something or practical information on how to do or use something (Cambridge Dictionary, 2016; Meriam-Webster, 2016). The Business Dictionary

(2016) further states, that a manual is comprehensive and provides a step-by-step guide concerning a particular topic, is useable by beginners and practitioners alike, details what is given and required, explains how to put the information into practice, and provide instructions on how to solve problems as they occur. While the level of detail in the definitions differs between the three source, they all agree that the main purpose of a manual is to say something about doing something and that the format is typically a book, which may be in line with a common perception of the concept “a manual”. This implies that the primary means of disseminating is through written text, perhaps with the addition of in-animate illustrations. Thus, the fictive spell-book can be defined as a manual, with the addition of magically enhanced illustrations.

The addition of animated illustrations in a manual need not rely on magic, however. The idea of including audio/visual material in text books or manuals has been proposed by cognitive psychologist and industrial designer Don Norman (2013). Attempting to answer his own questions of why a book should not include audio/visual material, being able to change dynamically according to who is reading it, and that *text* should be understood as anything that provides information, Norman attempted to digitalise some of his other books, adding features that allow the reader to summon a miniature version of the author onto a given page and explain the content. As this work was done some time in the late 90’s/early 2000’s the project fell prey to what Norman calls:

“... the demons of product design: good ideas that appear to early will fail” (Norman, 2013, p. 309, l. 10-11)

While the technology apparently was underdeveloped at the time for the project to be successful, it is now possible to convey instructions on how to do something through other media than written text. One example is YouTube, where a simple search using the string “how to” will provide the user with a plethora of videos explaining how to do anything from surviving wild animals attack, fishing with eggs and Pepsi, to cooking, and doing research. According to the financial news agency CNBC this hub of providing audio and video instructions will increase to grow as YouTube has invested \$20 million in growing channels that provide tutorials and educational content (Castillo, 2018).

Following the development of technology, it is possible to include other digital features in manuals and shape them as mobile applications. One example can be seen in the app-based user manual launched by the motor company Hyundai in 2015 that includes text, video, audio and makes use of Augmented Reality (AR), allowing the user to observe the vehicle through their smartphone and interact with the information provided on the screen (Hyundai Motor Company, 2019). Noticeably, the content of the app was created based on a survey of Hyundai customers that investigated which parts of the traditional printed manuals were most difficult to understand (Turpen, 2015).



Figure 10 Screenshots from the app "Hyundai Service Guide" showing examples of AR supported information.

Another example of an app-based manual is the "Safe Delivery" app, developed collaboratively by the Maternity foundation and researchers from Syddansk Universitet and Copenhagen University (Maternity Foundation, 2020). The purpose of the app is to support health workers assisting women in labour to combat the high rates of deaths associated with giving birth in low- and middle-income countries (Lund et al., 2016; Thomsen et al., 2019).

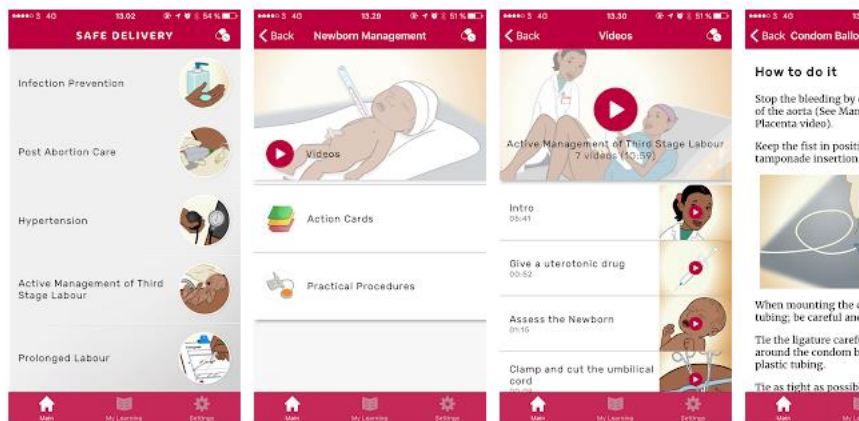


Figure 11 Screenshots from the app "Safe Delivery" showing examples of menus and sub-menus.

The app provides the user with an overview of different topics or situations related to giving birth. The content is composed of a mixture of text, drawn images, and animated images illustrating the required procedures. The effectiveness of the app was

initially investigated in a randomised clinical trial in 2016 by Lund et al., which showed statistical significance in improved knowledge and skills of the health workers ( $P < .05$ ) even though 60% of the health workers had never tried using a smartphone prior to the trial. A qualitative investigation by Thomsen et al. (2019) elaborated that the health workers perceived the app as a useful tool to update and memorise their skills and knowledge and improve their confidence. The study also demonstrated that the app was used differently among two groups of health care workers. One group who conducted many deliveries typically used the app in emergency situations, while the other group conducting fewer deliveries used it more often to improve their knowledge or provide health education. Thus, the app shows applicability prior to as well as during the situation, it is meant to assist.

Based on this short introduction I will argue that the concept “a manual” does not only refer to text and illustrations in an analogue book. Indeed, I will define a manual as “an artefact (analogue and/or digital) that provides information on how to do something”, thus avoiding a restriction of the artefact and allowing a wider understanding of the possible shape and content of a manual.

## **5.2. PURPOSE OF DEVELOPING A MANUAL**

As mentioned in chapter 5.1, the purpose of developing a manual is, basically, to provide information on how to do something. However, when perceiving the subject from a clinical and research perspective the manual can serve more specific needs. From a clinical perspective the purpose of a manual could be to provide information that in some way improves the quality of treatment, for example by enhancing the skills of the clinician or by providing information concerning the optimal or intended treatment. From a research perspective, especially regarding studies with interest in measuring effect or causality, the manual can serve as a strategy to ensure treatment fidelity by attempting to ensure homogeneity of the treatment administered as well as monitoring the extent to which the treatment has been administered correctly, ideally minimising the occurrence of confounding variables due to differences in treatments (Baker et al., 2019; Hinckley & Douglas, 2013; Wilczynski, 2017).

As noted by Wilson (1998) the application of a manual can be observed in a negative fashion, where a manual can be regarded as hindering by clinicians. However, Wilson argues that not only does a treatment manual enable training and supervision but also allows better treatment compared to relying on the subjective clinical judgements of the therapist. Wilson stresses, that manuals or protocols applied in randomised controlled trials must be adhered to ensure validity, yet a higher degree of flexibility is possible when applying a manual in a clinical setting. Even so, a manual should allow for some flexibility to suit the needs of the individual client and would thus benefit from providing the clinicians with information regarding when to deviate from the content of the manual.

According to Heimberg (1998) manuals can be placed on a continuum with regards to their level of flexibility. On one end are manuals with a minimal degree of flexibility that provides step-by-step instructions for all relevant content in a session, thus being fixed. On the other end are manuals that only provide a framework for the therapy. Heimberg demonstrates a treatment course that contains sessions with a lesser amount of flexibility as well as sessions with a high degree of flexibility. This serves as an example of a treatment course where the manual is not “either or”, but instead is constructed as a mixture.

### **5.3. FLEXIBILITY IN MUSIC THERAPY MANUALS**

Prior to designing and conducting the scoping review published in Article 2, I conducted a preliminary exploration of the concept of flexibility and levels of detail in a number of manuals ( $n=15$ ) published in the field of music therapy that I knew of beforehand. In order to explore how fixed or flexible the manuals were, I constructed a simple scoring system to help illustrate this. The presence of a meta theory would equal 1, descriptions of methods would equal 2, a suggested course would equal 4, and a fixed course would equal 8. The logic behind this scoring system is that the minimum score of 1 would indicate that the manual only describes a meta theory, thus possibly providing a lot of flexibility as it does not describe when to do what, whereas a manual providing both theory, descriptions of methods, and a fixed course, which illustrates something fixed as it describes what to do and when to do it, would receive the score of 11. The results of the analysis can be seen in table 1 on the following page.



Table 1 Scoring of manuals according to degree of flexibility

Reference	Context	Score
(Grocke & Wigram, 2010)	Receptive music therapy	2
(Bean & Oldfield, 2001)	Children	2
(Ridder, 2005)	Dementia	3
(Stige & Ridder, 2016)	Dementia	3
(Baker & Tamplin, 2006)	Neurorehabilitation	7
(Unkefer & Thaut, 2005)	Psychiatry	7
(Baker & Uhlig, 2011)	Voicework	7
(Rook et al., 2014)	Assessment of social skills	7
(Cassity & Cassity, 2006)	Psychiatry	7
(Thaut & Hoemberg, 2014)	Neurorehabilitation	11
(Wormit et al., 2012)	Adult oncology	11
(Ritter-Cantesanu, 2014)	Assessment of neurodev. disorders	11
(Jacobsen & Wigram, 2007)	Assessment of parental competencies	11
(Ellerkamp & Goldbeck, 2009)	Children and anxiety	11
(Gerdner, 2010)	Dementia	11

The scoring reveals that this selection of manuals is spread out between being flexible and fixed with scorings of 2 (= description of methods), 3 (= meta theory + description of methods), 7 (= meta theory + description of methods + suggested course), and 11 (= meta theory + description of methods + fixed course). While this initial investigation shows variations, it does not provide any in-depth explanations of how the manuals are constructed and how this influences the fix/flex relationship.

As an attempt to further investigate how the fix/flex relationship can be influenced, I identified nine parameters that can influence the degree of flexibility of a manual. The nine parameters are shown in table 2.

Table 2 Parameters influencing the fix/flex relationship

Parameter	Fix	Flex
Detail - overall	Step-by-step	Principles
Detail - steps	High detail	Low detail
Length	Finite	Infinite
Length	Multiple sessions	One session
Skill level	Low skill	High skill
Client perspective	Nomothetic	Idiographic
Animation	Inanimate	Animate
Goal	Specific	Broad/non-specific
Progress	Hierarchical	None

One example of an axis that is concerned with a manual's overall degree of flexibility could be to distinguish between a step-by-step protocol (fix) and general guidelines or principles (flexible). A strength of the fixed manual is partially that treatment fidelity can be monitored as a highly detailed description of the intervention yields a higher probability that it would be performed in the same way, regardless of who is performing the intervention as this then would not depend on each individual user's perception of the intervention. However, a weakness with this type of manual is that the content might not suit all possible scenarios, or it might be too complex to be useable if it contains details on how to act in every possible scenario. This, on the other hand, is a strength of a flexible manual. Being less detailed, the user is able to adjust the content to suit different scenarios. A weakness is that controlling and monitoring different variables is more difficult.

Another axis could be one concerned with the skill-requirement of the user. Presumably, many persons would be able to follow a detailed manual concerning how to write and send an email from a tablet and complete the task. However, if the manual

was about building a woodworking project it might not be possible for everyone to complete the task regardless of the level of detail in the manual, because the manual might not be able to assist the user's ability to control a handsaw for instance. In a clinical context this difference could be the difference between either pressing "play" on a music-player to play a prescribed piece of music or performing a highly complex piece of improvised music.

One last axis, which is in line with the aforementioned axis, could be whether or not the purpose of the manual is concerned with operating something or interacting with someone. For example, if the manual is concerned with an animate or inanimate object/subject. The difference here being that an operation is some kind of procedure that is executed on something that does not react in an unpredictable way (such as inanimate objects). Interaction on the other hand concerns doing something with someone who is able to react in unpredictable ways (as in a dialogue between two persons).

In this example a manual that mainly adheres to all parameters in the "fix" column will presumably be likely to bring about the same result each time, no matter who uses it and thus be more reliable. However, as the topic of treatment manuals often do revolve around animate subjects (i.e., persons), there is a need to adapt the different parameters to allow for the most effective manual. Depending on the purpose, the presumed users, and target groups of the manual, it could be necessary to mix the parameters. This composition could influence the degree of flexibility of a manual differently, depending on each parameter.

## 5.4. FRAMEWORKS IN MUSIC THERAPY MANUALS

The previous chapter 5.3 has provided examples that mainly concerned describing how factors such as *content*, *purpose*, and *user* may influence the degree of flexibility in a manual. In this chapter, I will present four different examples of the overall framework of manuals taken from the field of music therapy.

The first example I will present has been proposed both by Rolvsjord et al. (2005) and Hannibal et al. (2019). Instead of presenting the user with a number of steps or specific instructions concerning what to do, they suggest a model that guides the user by grouping lists of principles and, to some extent, actions hierarchically in four groups; *unique and essential*, *essential but not unique*, *acceptable but not necessary*, and *proscribed*. This model can guide the user and it provides some boundaries and directions for the session, contextualising the actions within the session as well as giving them meaning that is, they serve a purpose in the specific context, and it stresses that some actions are counterproductive. Rolvsjord et al. (2005) address the issue of manuals typically being a fixed and inflexible construct which is incompatible with the resource-oriented approach in music therapy. They suggest that the principle-based manual can provide room for tailoring the intervention to the specific client and

situation and can serve as a tool to develop a specific type of approach or mindset in the therapist rather than serving as a resource that provides specific instructions. The mindset mentioned is called “*rigorous flexibility*” which covers the idea that the therapist can stay open to the resources in the individual client and combine this information with theory and research to provide tailored interventions. Hannibal et al. (2019) apply the same type of manual framework in their study where they present The Process Oriented Music Therapy (PROMT) manual. They incorporate the same hierarchical list of unique, essential, acceptable, and proscribed principles, adapted to fit their clinical and theoretical context which includes personality disorders, analytical informed music therapy, and mentalisation based treatment. When evaluating the manual, the therapists enrolled in the study reported that they found the manual useful and the principles fitting for the population. However, the therapists also reported, that when they faced situations related to mentalisation breakdowns, the principle-based manual was not able to assist them. Instead, the therapists asked for more specific and detailed instructions on how to treat these situations. The authors conclude, that future versions of the PROMT manual must include specific instructions on maintaining a mentalising perspective as well as instructions on handling breakdowns in mentalising capacity. Their results indicate, that the principle-based manual framework can have shortcomings in certain situations where it is possible and fruitful to provide specific, fixed instructions or techniques, thus reiterating Heimberg's (1998) recommendations previously presented in chapter 5.2.

Another type of manual framework can be observed within the field of neurologic music therapy (Thaut & Hoemberg, 2014) and guided imagery and music based interventions such as short music journeys (Wärja & Bonde, 2014). These manual frameworks differ from the previous principle-based frameworks in a number of ways especially due to the fact that they divide the individual session into separate, successive phases. This provides the reader with directions concerning “when should what happen”. They also provide the reader with a more specific set of techniques to be used at a specific phase in the session. The reader is still left with a degree of flexibility due to the fact that the manuals do not provide a pre-defined course of treatment but are only concerned with one session. Also, the level of detail in describing the different techniques vary, allowing or making the therapists decide themselves what method, what piece of music, which questions, and what direction will be most suitable for the specific client's therapeutic process.

Much of the flexibility allowed in the previously mentioned manuals is minimised in manuals such as the manual for treating anxiety disorders among children using multimodal music therapy by Ellerkamp and Goldbeck (2009). This framework provides the reader with a complete treatment course consisting of several, finite sessions instead of only one session. The content of each session is described in great detail by dividing the sessions into phases with lengths of time provided. The phases contain different, specific techniques that are to be used. That is, the user is not given

the opportunity to choose between different techniques within a phase but is instead provided with a specific technique that is to be used at a specific time. The techniques are described in great detail, including verbatim scripts in a level of detail that includes directions concerning which words should be emphasised. The level of detail in this type of manual framework leaves the therapist with only a small degree of influence on the treatment as many decisions have been made a priori.

Finally, I will present a manual framework that consists of a sequential procedural framework which guides the reader through different steps to reach a treatment goal and allows or requires the reader to choose between different techniques. This type of framework was suggested by myself and my co-author in our master's thesis where we investigated the use of musical, verbal, and non-verbal methods of care in the context of providing care and assisting with personal hygiene to persons with dementia in care homes (Anderson-Ingstrup & Anderson-Ingstrup, 2015). The framework presents the assumption that in order to provide assistance with personal hygiene without conflict, it is important to create a safe context for the person with dementia. This is done through the use of one or several types of musical, verbal, and non-verbal methods of care. The choice and application of care-method should be carried out based on a person-centred approach that takes the preferences and current psycho- and physiological state of the person with dementia into account and encourages a state of mind from the caregiver that includes viewing the person as a person and maintaining a high degree of curiosity and flexibility with regards to figuring out what works for whom in what context. Besides the framework, a "toolbox" consisting of the different care-methods is provided containing descriptions of the different care-methods. While this manual framework is not session-based it is to some extent situational-based as it guides the reader towards a specified goal. It does not divide the road towards the goal into phases but instead it provides the reader with an ordered way of how to reach the goal from a theoretical and axiological perspective.

## **5.5. A REALIST PERSPECTIVE ON MANUALS CONCERNING COMPLEX INTERVENTIONS**

This section presents the main results of the scoping review reported in Article 2 as well as presenting a framework for considerations related to designing manuals which is inspired by the realist perspective of addressing "what works for whom in what context?"

The main purpose of Article 2 was to obtain manuals published in refereed journals containing complex interventions that were not session-based and to extract information concerning how their contents were disseminated. The search was designed as a scoping review (Tricco et al., 2018) and was guided by the PICo model (Joanna Briggs Institute, 2014). Nine articles were included and analysed using template analysis (Brooks et al., 2015). A detailed record of the results, definition of

search terms, and the search protocol are included in Appendix B and C of this linking text. The main scope was to extract information regarding the manuals' degree of flexibility, the availability of tailoring the intervention, and what kind of dissemination elements were used. This then served as a basis for providing recommendations concerning the development of future manuals.

While the full results are available in Article 2, some comments regarding the main findings concerning dissemination elements are presented here. One notable finding was that none of the manuals contained audio/visual material, including illustrations or inanimate pictures. As presented in the beginning of this chapter, these elements could be of relevance when describing certain actions within the field of interest. While all manuals used written text, the structuring of the text varied. The majority used only headlines to guide the reader while a few also included either text in boxes, graphs, or tables. Nearly all the manuals presented a hierarchical structure that is, that one action comes before another and so on. The type of directing content differed as well and consisted of examples, questions, suggestions, directions, and do-nots.

Whereas these findings can provide some information relevant for designing manuals describing complex interventions, they were restricted to detailing information available from the manuals included in the scoping review. To further expand on this body of information and discuss the optimal manual framework for PAMI, I will present my own reflections concerning other possible relevant considerations that may influence the successful design and implementation of a manual. I will do this by following the realist perspective presented in chapter 3.1.1 regarding mechanisms, context, outcome, and context-mechanism-outcome pattern configuration (CMOC), by grouping my reflections according to the five Ws; *what*, *when*, *where*, *who* and *why*. The reflections are based on my experience from working with the subject and the information regarding manuals that I have presented in this thesis so far. Following the reflections, I will present recommendations regarding relevant considerations concerning the five Ws (i.e., the mechanisms). In order to provide the reader with an applicable summary of these recommendations, I have created icons that sum up each W, as well as the synthesis of the Ws (i.e., the CMOC), presented as a figure. The icons and figure are intended as mnemonic devices, and I have based them on principles from the field of information visualisation (Healy, 2019; Interaction Design Foundation, 2020b; Kirk, 2019).

### 5.5.1. WHAT

This concerns the question “What is the purpose of the manual?”. Does it tell how to change a tire? Does it tell how to train a cat? Does it tell how to treat depression? As stated previously in chapter 5.3, the purpose might influence the content as well as the structuring of it within the manual. The question also addresses the necessity of the content to be effective in achieving the purpose of the manual, whatever that might be. Thus, some situations might benefit from a manual with “static” content (e.g.,

inanimate pictures or text) that allows the user to linger at steps for as long as they wish, which is a possibility that content of a more dynamic nature (e.g., video or audio) might not permit to the same degree.

When developing the content of the manual it is possible to follow the guidelines presented by Craig et al. (2013) for developing complex interventions concerning development, feasibility, evaluation, and implementation. Adding on to their guidelines, one should consider how information concerning the procedures in the manual is obtained. It might be based on theory, clinical/"expert" opinion (single- or delphi-based), Patient Public Involvement (PPI), or a combination as well as on the basis of repeated pilot-testing.

As different manual frameworks might suit different purposes better or worse, the framework should be designed with the particular content in mind. This mechanism regarding different purposes is illustrated with the icon in the following figure 12:



Figure 12 Icon referring to "what?"

The icon depicts a number of routes and a question mark, thus illustrating the need to consider the different possible purposes of a manual and decide upon "what?" the purpose of the manual is. The development of the content might follow different strategies, yet care should be taken to ensure that the content is of high quality. The "perfect manual framework" will not make an ineffective intervention effective, although an improper manual framework might decrease the effect of the "perfect intervention" if the framework causes issues for the reader.

### 5.5.2. WHEN & WHERE

"When should the manual be used/read/consulted?" I have chosen to group when and where, as they are intertwined in this context. *When* something is consulted it happens *somewhere* and vice versa. Thus, these questions regard the *context* in which the manual is consulted. It is possible to consult a manual "prior to", "during", or "after" the situation it concerns (see figure 13 on the following page). This can furthermore be subdivided into smaller units: "Prior to" may be long before the situation (e.g., years, months, weeks, or days) or closer to the situation (e.g., hours or minutes). The former could resemble a manual where the content can or should be learned or memorised, and the latter a manual where it is possible or necessary to consult it just before something happens, but not while it is happening. Then there might be situations that calls for or allows a manual to be consulted "during" an intervention

either continuously or by taking small breaks. Lastly, it is possible that some situations call for a manual to be consulted immediately “after” a situation or after a longer period of time. However, it is important to stress that a manual may be intended for consultation at specific times as well as at different times, thus not solely belonging to a single temporal moment.



*Figure 13 Illustration concerning the different times a manual can be consulted*

The Safe Delivery App mentioned in chapter 5.1 is an example of a manual applicable both prior to, during and after the situation targeted by the manual (Maternity Foundation, 2020; Thomsen et al., 2019). Examples of usage “prior to” includes using the manual to study procedures and informing pregnant women about relevant procedures, “during” where the reader would guide a co-worker or to guide oneself by turning up the speaker volume, and “after” to function as a tool for reflection. While the study by Thomsen et al. did not find the use of the manual obtrusive to the situation, they did find one noticeable limitation that concerned the lacking possibility of charging the smartphone where the app was installed, as this could involve traveling great distances in the country where the study was conducted. This further illustrates how the question of “where” becomes relevant.

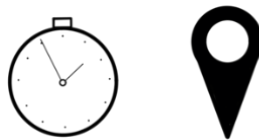
An example of a manual meant to be used “during” a situation is the Hyundai app mentioned in chapter 5.1 (Hyundai Motor Company, 2019). The AR technology requires the user to look at the engine while the service is being done and the situation is not necessarily affected by the user consulting the manual between actions or while executing them. However, since the content of the manual unfolds in concordance with the required actions being executed it is less appropriate for usage prior to or after the situation. As the state of the motor is not affected by the person looking at it through a smartphone there is no obvious downside connected with this type of manual in this context. If, however, the situation targeted by the manual included helping a person with dementia getting dressed, the person with dementia would probably be affected negatively by a similar manual, requiring the user to look at them through a smartphone. However, it might still be possible to develop a manual framework that would not interfere negatively with the person with dementia, if the situation demands the manual to be accessible during the situation. While the Safe Delivery App illustrated the possibility of attending the manual during a situation by turning up the volume, this might affect this particular situation. Another strategy could be the application of a poster placed visibly to the user, as the consultation only requires the user to glance at the poster, thus minimising the time needed to consult



the manual, minimising the absence from the person with dementia and eliminates the need for the user to collect or open another physical object, that the manual could have been shaped as.

Indeed, the physical shape of the manual is another factor that should be addressed, as this also is influenced by “when?” and “where?” the manual is to be consulted (Kirk, 2019). This includes taking into account how easily the manual should be to access as different formats may influence the ease of accessibility (e.g., a book (small/large), a DVD, a webpage, an app, a poster, etc.). For example, inserting a DVD into a DVD-player and navigating the menus probably takes more time than opening a book (depending on the quality of indexing). In order to consult the book, however, the reader may still need to go fetch it somewhere, whereas a manual shaped as flash cards or an app (Deudon et al., 2009; Thomsen et al., 2019) can be carried by the reader.

As different criteria apply to the degree of applicability of a manual at different times and that the local context may have an influence on the appropriate physical shape of a manual, it is important to construct a manual in such a manner that it is easily accessible and inobtrusive to the situation, especially if the optimal use of the manual is intended to be during a situation. Thus, it is important to consider the specific context where and when a user will need the manual and adapt the manual to suit the criteria invoked by the specific context. These mechanisms are illustrated by the two icons presented in figure 14 below:



*Figure 14 Icons referring to "when?" and "where?"*

The icons depict a clock and a map-pin. The clock refers to the mechanism “when?”, although this mechanism does not only refer to a specific time of day, but temporality in general. The map-pin refers to the mechanism “where?” by lending to the locating-properties of the map-pin.

### 5.5.3. WHO

Another factor possibly influencing the appropriateness of a manual is the question of “who will be using the manual?”. The answer to this question could be of relevance regarding both the content, that is, complexity of actions and level of detail in descriptions, and the shape of the manual such as structure, type of media used, and type of language as the learning style, vocabulary, and technological abilities may differ from person to person.

One strategy to increase the possibility of creating a successful and useable manual is to differ the content and shape according to who the intended users are. This process could be supported by applying the “persona” method (Nielsen, 2011) in order to chart relevant information regarding the preferences of the intended user. Another strategy is to include a PPI strategy and involve persons from the group intended to use the manual. An example of this can be seen in the manual *Your Shed and Dementia: A Manual* (Abbato, 2014) which included collaboration with board members of different shedder’s boards with the specific aim of turning the manual into a user-friendly resource for the intended readers.

The framework of a manual should convey content in a manner that encourages the reader to stay attentive. Currently, there is a trending decrease in the collective attention span of the human mind, that is, on a general level the amount of available information has increased while the attention span of the mind remains the same, thus causing attention to shift more quickly from one thing to another (Lorenz-Spreen et al., 2019). While this does not necessarily address the attention span on an individual level, this could be a factor that possibly could influence the successful implementation of a manual in this age of information. It does, however, remain important to avoid information overload so that the reader is able to recall the content of the manual (Interaction Design Foundation, 2020a; Miller, 1994; Schwartz et al., 2019). The length of a manual, ease of navigation, and quality of the content could be factors that influence the reader’s attention, either negatively or positively. The inclusion of digital content (audio and animated visual material) may convey information regarding actions clearer than analogue text and illustrations. However, as different persons may have different degrees of technophilia or technophobia, the choice of or amount of digital/analogue content may affect the interest in consulting the manual differently from person to person.

The principle of adapting the content and shape of the manual to suit the anticipated user connects with Kierkegaard’s (1859/1991) perspective on being a helper, presented in the beginning of chapter 1; we must understand what the other understands and begin there if our knowledge is supposed to be helpful and successful in moving the other to a certain place. A manual will not work if it is not consulted, nor will it work if the reader is not able to understand or follow the information provided in it. The mechanism regarding the need to consider the users of the manual is illustrated with the icon in the following figure 15:



Figure 15 Icon referring to the mechanism "who?"

The icon depicts a group of people, thus illustrating that not only one person may need to use the manual and the need to consider “who?” will be using the manual. While the people in the icon may seem alike and anonymous, I do not mean to say that this is the case with the real users, who most likely will vary in different ways. Instead, the reason for depicting the persons alike and anonymous is to keep the icon simple.

#### 5.5.4. WHY

This concerns the question “why is a manual needed?”. In the context of this thesis this mainly concerns whether a manual is supposed to be used in a clinical setting or as part of a fixed research study. This question becomes relevant as these two scenarios could influence the degree of flexibility and tailoring of the content allowed in the manual. If a manual is intended for a study with the aim of investigating causal relationships, a high degree of tailoring would potentially affect the result’s validity. At the same time, a certain degree of tailoring may be necessary for an intervention to be effective in a variety of real-world situations. Tailoring or adaption of the content may indeed happen, even if it is not intended (Pawson et al., 2004). As such, different research paradigms may require different degrees of detail concerning the procedure and the manual, depending on the underlying assumption being either that change is brought about by a treatment alone or that the dynamic nature of human reason and different choices is part of the effect (Pawson et al., 2005). While a manual only intended for clinical use may not need to abide to the strict criteria proposed by certain research paradigms, this does not necessarily imply that a clinical manual cannot benefit from a high level of detail. It does, however, imply that less attention to research criteria is needed when designing the manual, thus removing a consideration from the pool of considerations suggested. To illustrate the mechanism “why?” in the context of this thesis, I have chosen the following icon presented below in figure 16:

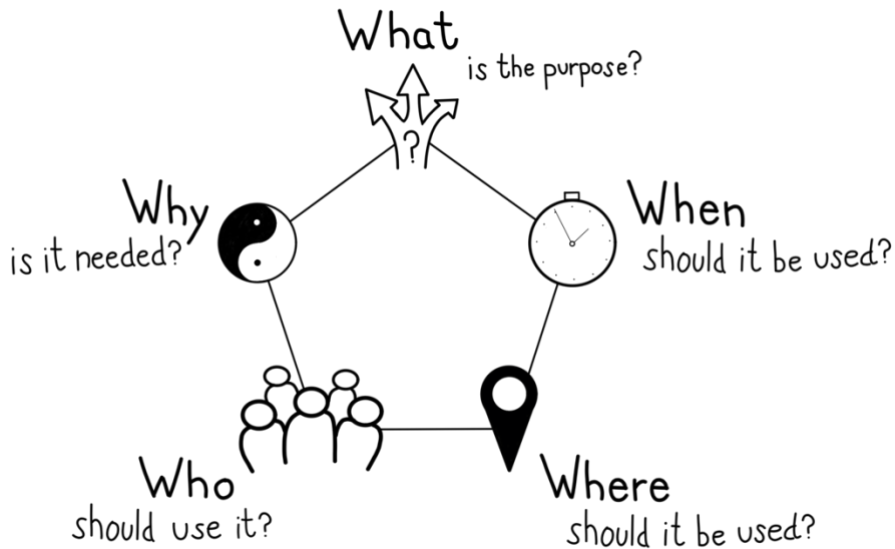


*Figure 16 Icon referring the mechanism "why?"*

The icon depicts the ancient Chinese symbol Yin & Yang. I chose to use this symbol due to the fact that it resembles a dualistic relation, yet also a combination of two opposites. Thus, I find that this illustrates that the manual will need to meet different requirements depending on whether it is intended for a clinical or research setting. Also, it illustrates that these two different settings inform each other.

### 5.5.5. SYNTHESIS OF THE WS

By dividing the analysis of relevant mechanisms into groups using the five Ws, I have presented reflections that may be of relevance when designing a manual, including its content and shape. In chapter 5.5.2 I argued, that the mechanisms “when” and “where” should be pooled together as they are intertwined. This, however, also applies to the other questions as someone (who) will be doing something (what) for some reason (why), thus making up the CMOC of an effective and applicable manual framework. While each group contain considerations regarding the specific question, all questions should be considered in relation to each other. Even though it might not be feasible to construct a manual that will perfectly suit all five Ws, they can be applied to guide the design of a manual by assisting the manual designer in reflecting on the connection between the shape and content of a manual and the intended user, situation, and objective. In order to illustrate the need to consider the interaction of the mechanisms (in other words, the CMOC), I have constructed the following figure 17:



*Figure 17 Context-Mechanism-Outcome pattern Configuration of manual frameworks*

While the icons only are connected via the circumference of the pentagon it may seem as if each mechanism only interact with the neighbouring mechanism. However, as previously stated they all interact with one another. I could have illustrated this by drawing a line between each icon, thus creating a pentagram within the pentagon. I have chosen not to do this, however, as I find that the extra lines can cause aesthetic and perceptual problems (Healy, 2019), thus potentially weakening the figure’s applicability.

## CHAPTER 6. DISCUSSION

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*“Burning with curiosity, she ran across the field after it, and was just in time to see it pop down a large rabbit-hole under the hedge. In another moment down went Alice after it, never once considering how in the world she was to get out again.”*  
(Carrol, 1998, p. 3)

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In this chapter, I will sum up the thesis and present discussions concerning the disclosed content. As the opening quote illustrates, the discussion is a place where many exciting and possibly long and winding routes can be taken to deepen the knowledge presented in a study. As the main purpose of this linking text is to provide an answer for research question 1 (see chapter 1), I have chosen to remain on one route in this discussion by focusing on content concerning the basis for answering this research question and the associated limitations.

### 6.1. SUMMARY OF THE THESIS

The purpose of the thesis was to investigate and propose knowledge that can aid the design of manuals concerning complex interventions by detailing mechanisms that may affect the applicability of a manual in a specific context. Secondly, it concerned contributing to the construction and definition of the phenomenon PAMI. The thesis consists of three separate articles and this linking text.

The linking text began with an introduction to the field(s) of interest as well as a presentation of background- and contextual information. This part also included a conceptualisation of PAMI which included the results of Article 1. The results indicated that phenomena such as empathy and interaction could not be satisfactorily explained by mirror neuron theories. As such, this theory could not be recommended to provide a fact-laden theory to explain an attunement process. Finally, the project’s research questions were presented.

In chapter 2 I described two roads that had been followed yet were not completed. This included a discussion of possible outcomes relevant to measuring the effect of PAMI and an ethnographic investigation of Danish music therapists working in dementia care. The preliminary results regarding outcomes suggest that different biometrical measures could be applicable to measure the effect of PAMI, although these came with a number of methodical limitations and challenges. The preliminary results regarding the ethnographic investigation indicated a gap in knowledge regarding the question of “when is a music therapist needed”, although the preliminary

results suggested that while some tasks in dementia care require music therapeutic training, others may be completed by care staff without music therapeutic training. The specific definition of these tasks remained, however, ill-defined.

Chapter 3 provided an introduction to the overall methodology of the thesis, which is based on the realist approach where discussing and reflecting on “what works for whom, in what context” and exploring the mechanisms involved in interventions is of importance. In this chapter, I also presented information regarding ethical considerations, ethical approvals, as well as my own ethical reflections.

In chapter 4 I introduced my expanded reflections regarding the methods applied in Article 3. This included my choice of transcription style in the context of CA and details concerning the extraction of musical data. The main findings of Article 3 were summarised, which included a description of how different musical elements were used in a PAMAR process.

Chapter 5 referred to the concept of manuals, and I began with a discussion of the ontology of a manual as well as defining a manual as “*an artefact (analogue and/or digital) that provides information on how to do something*”. I then presented the results of an exploration carried out prior to conducting the review disclosed in Article 2 and I presented the main findings of Article 2. These included the different types of media and dissemination elements that appeared in the included manuals. I then expanded these findings by presenting examples of manuals from the field of music therapy to discuss differences in manual frameworks. Finally, I proposed a number of possible mechanisms affecting the design of an applicable manual by approaching the issue from a realist perspective. The results of this exploration disclosed a number of possible relevant mechanisms concerning the content and context of a manual and considerations regarding how the specific content, context, and their interaction affect the overall design of a manual, that is, the CMOC. This was presented as a figure which was intended as a mnemonic device, potentially increasing the applicability of the results. In the following Chapter 6.2, I will apply these results to discuss how a manual framework can be formulated for PAMI to achieve applicability in both clinical and research settings and thus provide an answer to research question 1.

## **6.2. DEVELOPING A SUITABLE MANUAL FRAMEWORK FOR PAMI**

Following the principles of realist evaluation described in chapter 3.1.1, I will answer research question 1 by discussing the findings and concepts presented in Chapter 5 in relation to the concept of PAMI. First, I will summarise the findings, and then I will proceed with relating these findings to a possible manual framework for PAMI and propose a CMOC in order to answer research question 1:

**Research question 1:** *How can a manual framework be formulated for Person Attuned Musical Interaction to achieve applicability in both clinical and research settings?*

### 6.2.1. THE FIVE WS OF PAMI

As the optimal manual framework for PAMI will depend on the specific context it is to be implemented in as well as the content it will contain, I will explore the framework by discussing mechanisms, context, and outcomes grouped according to the five Ws presented in chapter 5.5: what, when/where, who, and why.

#### What

The question of “what” is highly relevant for the design of the most appropriate framework as different frameworks may suit different content better than others. However, as mentioned earlier in chapter 1.5, at the time of writing this linking text, there is not yet a clear or final definition of what PAMI is. It does, however, include something about interacting with persons with dementia, possibly through a range of verbal, non-verbal, and musical actions as well as attitudes in the caregiver, thus being of an ecopsychosocial and complex nature (Craig et al., 2013; Zeisel et al., 2016). As these actions most likely will be multi-modal and of a certain complexity the PAMI manual could benefit from the use of animated dissemination elements in order to correctly convey as many details concerning the actions as possible. Allegedly, PAMI does not concern a few sets of specific actions that are contained in a session, but rather concerns something that is active throughout the day in all interaction situations. Care should therefore be taken to structure the content of the manual in such a way that is obtainable, even with the possible absence of the structuring function of a session.

#### When/Where

The question of when/where the manual is supposed to be implemented and the opportunities or restrictions related to the given context influence which manual framework as well as physical manifestation will be most optimal. While it is not yet clear in what exact context PAMI will be implemented, it will most likely be in the context of nursing homes. This does not directly dictate if the manual should be consulted prior to, during, or after a given situation. However, as the “what” allegedly will concern moments of interactions, this will restrict the amount of applicable shapes the manual can assume, as the consultation of certain types of manuals during an interaction most likely can influence the quality of the interaction negatively.

#### Who

The intended users of the PAMI manual are caregivers working in nursing homes. In a Danish context, which is the main context that PAMI is developed in, this group is mainly constituted by professionals with a health care education lasting approximately between two to four years, as well as some without a specific education, and

professionals with a social worker education lasting approximately four years. PAMI could also be of relevance to the technical and administrative personnel at the nursing homes. Thus, from a professional perspective this is a rather heterogenic group with possible differences concerning the intra-professional language and ontological understanding of the context, that is, interactions with persons with dementia. Also, there will most likely be a level of heterogeneity within each group which could influence the successful implementation of a manual. Thus, it remains important that the developers of the manual “first and foremost ensure finding him [the user] where he is and begin there” (Kierkegaard, 1859/1991, p. 96). While it may not be feasible to construct single manuals for all individuals, general characteristics concerning the different groups could be extracted and used to guide the development of one or several different manuals. This could also include the development of a trainer’s manual.

## **Why**

As stated in the original overall project description and reflected in research question 1 of this thesis, the purpose of constructing a PAMI manual concerns both providing clinicians with a useful tool, as well as possibly serving as the foundation for quantitative, controlled exploration of the effect of music in PAMI. The use of the manual in research may influence the nature of how the content is structured, detailed, and disseminated, and the degree to which treatment fidelity can be monitored, more than the physical shape of the manual. While some research strategies may require the application of a fixed, step-by-step protocol this may be less appropriate in a clinical context. However, depending on the purpose of the theorised study, the manual may be constructed to be equally suitable in clinical and research settings.

## **6.2.2. MANUAL FRAMEWORKS AND PAMI**

In this subchapter I will shortly sum up the information I presented in chapter 5.4 regarding manual frameworks and then I will relate this to the information constructed in the previous chapter 6.2.1.

In chapter 5.4 I presented four different manual frameworks; one based on principles (Hannibal et al., 2019; Rolvsjord et al., 2005), one that includes a number of specific directions concerning what to do while leaving some decisions to be carried out by the therapist (Thaut & Hoemberg, 2014; Wärja & Bonde, 2014), one where all needed actions are described in detail as well as the time when the actions should be carried out (Ellerkamp & Goldbeck, 2009), and then one that guides the user by providing a sequential frame model with descriptions of methods, the use of which should be decided by the user, based on the model (Anderson-Ingstrup & Anderson-Ingstrup, 2015).

The first three manual frameworks present different degrees of flexibility, the first being quite flexible and the last being quite fixed. As the content and purpose of the



different manuals differ from one another, their respective type of framework may well be suitable for themselves while being less suitable for each other. The suitability of the framework was only addressed in one study, however (Hannibal et al., 2019). While Hannibal et al. did report, that flexibility was important, there were specific situations within the context targeted by the manual that could benefit from more specific directions to guide the user. This finding concurs with the recommendation presented by Heimberg (1998) some 20 years earlier, thus lending support to the strategy of constructing manuals with different degrees of flexibility.

The strength of the fourth framework (Anderson-Ingstrup & Anderson-Ingstrup, 2015) lies in the attempt to maintain an adequate amount of flexibility and tailoring of the actions to suit the person with dementia while guiding the user in using and choosing between different methods of care. However, as the user is guided to choose method by taking into account the preferences and current mood an arousal state of the person with dementia, it does leave the user with a possible number of grey areas, where a description of different situations may enhance the fidelity of this framework.

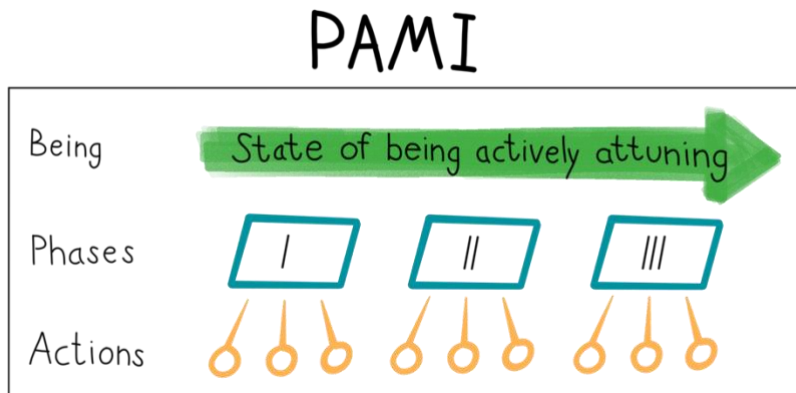
### **6.2.3. CMOC**

As PAMI is currently conceptualised as a complex intervention that does not take place in the context of a closed session or number of sessions, but must be adapted to suit different persons in different situations at any given moment, it does not seem feasible that a highly detailed and fixed framework will be suitable, as this framework could fail either by suggesting a fixed set of actions that are too simple and only suitable in a few number of situations, or it could attempt to anticipate and describe all relevant actions for all possible situations which in turn could overwhelm the reader with a plethora of information, thus rendering the manual unusable. On the other hand, I anticipate that it can be possible to define some array of actions that are applicable in PAMI, and that it could be more beneficial for the user to receive this information rather than merely receiving information regarding principles underlying the intervention. Based on a synthesis of the characteristics of the different manual frameworks, as well as the five Ws, a feasible PAMI manual framework could be one that guides and informs the reader by providing an overview of the possible sequential nature of a PAMI, varying the degree of flexibility within these to be low when possible, supplying the user with information regarding when and how which actions should be executed, guiding the user in choosing between them, and by providing information regarding the recommended attitude of the user.

Based on this synthesis, I have constructed two concept models that illustrates how a PAMI manual framework could be conceptualised, which I will present in the next chapter.

## 6.2.4. CONCEPT MODELS

The following concept models represent how a manual framework could be constructed for PAMI by detailing the underlying programme theory (Pawson et al., 2004). While there currently is no specific content to add, as PAMI has not been finally defined at this time of writing, the modelled frameworks provide an overview of how the content could be connected to the anticipated sequential nature of PAMI. The models thus provide the reader with information regarding the appropriate state of mind/approach and a sequenced phase division of PAMI with a selection of relevant actions. The first model I created is presented below in figure 18:



*Figure 18 Draft concept model 1*

The model in figure 18 provides an overview of the different phases unfolding in a PAMI, as well as the overarching state of mind the user should attempt to achieve. The number of phases in this example is three, which could cover phases such as “greeting”, “acting”, and “parting”, and are illustrated by three blue squares. This number is purely hypothetical as PAMIs may consist of more or less phases, depending on their definition. However, as previously described in chapter 5.5.3, the number of phases should not exceed a number that would render the manual unnecessarily difficult to be read. The array of actions is illustrated by the orange circles, that are attached to the blue squares. Rather than only attaching one action to each phase, a number of actions are proposed to allow tailoring in accordance with the specific context, for example, time, place, person, and purpose (when/where, who, and why). This is also based on the assumption that some action may be more suitable for one phase than another, and so forth. The “state of being actively attuning” is illustrated by a green arrow, placed above all the phases. The purpose of this is to illustrate that attunement does not only happen at the beginning of a phase but remains important throughout the interaction, as the person with dementia may respond differently from time to time and person to person. The caregiver should therefore

remain attentive to the person with dementia's reactions, and constantly attune their actions to suit these reactions.

To further highlight the mechanism of attunement, I created a second model, which is presented below in figure 19:

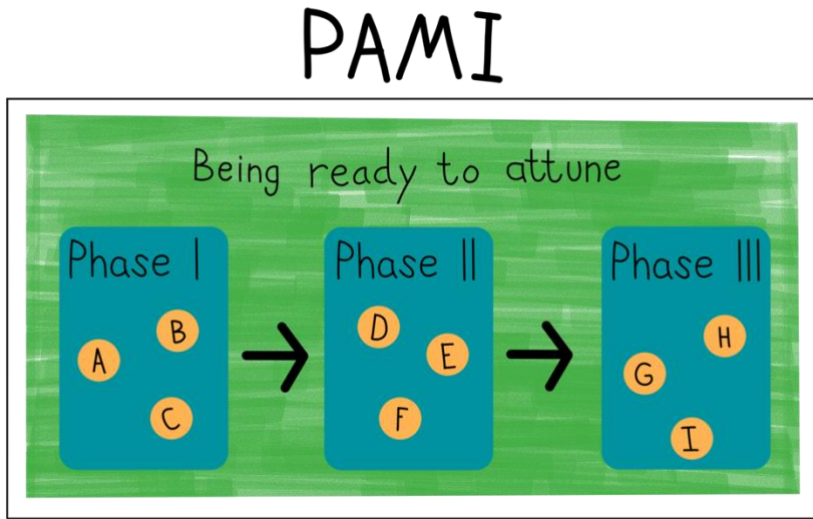


Figure 19 Draft concept model 2

This model also contains the three elements included in the previous model: being ready to attune, a number of phases, and suggested actions tied to each phase. In this model, the actions are illustrated with orange circles containing letters, thus illustrating different possible actions, the phases are illustrated as blue squares that contain the orange circles, and “being ready to attune” is illustrated with the green colour that surrounds the squares. Where the previous model showed the elements separated from one another, I attempt with this model to further illustrate that the different actions occur *within* the different phases that all take place *within* the overall way of being (i.e., constantly attuning to the person/situation).

While neither of the models in themselves should be regarded as *the* PAMI manual, they serve the purpose of illustrating how, as a programme theory, the manual could maintain a reasonable amount of flexibility and possibility of tailoring to suit the idiographic nature of dementia care and explain the complex nature of PAMI while providing the reader with specific instructions and a sequential understanding of the situation. The model itself may serve to guide the construction of the physical PAMI manual (that being analogue, digital, or both) as well as providing the reader with a simple overview of the phenomena PAMI. By sequencing PAMI into phases and providing the reader with specifications regarding applicable actions it also becomes

possible to monitor treatment fidelity, which can be of relevance both in clinical and research settings. If it is possible to carry out successful PAMI based on the proposed programme theory, the manual could be simple enough to be used in the context of everyday clinical work, yet contain enough detail to be used in research studies applying methods where this monitoring is of relevance for the integrity and quality of the research.

### 6.3. LIMITATIONS

The findings, conclusions, and recommendations of this study should be seen in the light of several limitations. The general scientific approach followed in this thesis has been based on principles from the realist perspective, which address the question “what works for whom, in what context?” by investigating and proposing mechanisms. This can be achieved by a number of methods, yet I have only applied a limited amount in this thesis. My methods have mainly had an explorative, descriptive scope and included qualitative data. The majority of the included data has consisted of publications (Article 1, Article 2, & the linking text), thus qualifying as *desk-based* research (Robson & McCartan, 2016), as well as empirical data extracted from the video analysis presented in Article 3. Thus, the list of mechanisms and their proposed functions should not be considered as finite but could indeed benefit from the application of a wider array of methods and types of data.

This relates to the Indian parable of the *blind men and the elephant*, where a group of blind men tries to conceptualise an elephant by each touching only one part of the elephant (Saxe, 1873). Thus, each person is only able to discover one quality of the elephant. In order to better understand the concept, the men could share their experiences as the conceptualisation would then be based on different perspectives. However, even though the combined knowledge would provide the men with a fuller understanding of the elephant, this knowledge would still be limited to the information obtained by *touching* the elephant.

Similarly, the fact that I only have applied a limited array of methods to investigate the mechanisms of a functional manual, the knowledge underlying my proposals are limited to what has been obtainable through these methods and the specific pool of data. In order to strengthen this knowledge, it is of relevance to further study the proposed mechanisms and their relevance. This could include investigations concerning the preferences of the intended users, co-creation of manuals with the intended users, conducting pilot studies that includes monitoring the manual’s fidelity, or experimentation with different final manuals to further isolate cardinal mechanisms and further develop and strengthen the underlying programme theory. Thus, future studies could benefit from following both fixed and flexible approaches, as more knowledge is needed from each approach. By gaining a deeper understanding of the programme theory from multiple perspectives, the realist evaluation objective of constructing a “list of options and main considerations that should be taken into

account when choosing between them” (Pawson et al., 2004) could contain even more qualified information to guide the designers of manuals concerning complex interventions.

## CHAPTER 7. CONCLUSION

The purpose of this thesis was to contribute to the knowledge base to the PAMI project by exploring mechanisms involved in the applicability of manuals about complex interventions and by investigating some facets of the phenomenon *person attuned musical interaction*. This process was guided by the following research questions:

**Research question 1:** How can a manual framework be formulated for *Person Attuned Musical Interaction* to achieve applicability in both clinical and research settings?

**Research question 2:** How are manuals describing complex interventions in dementia care structured and disseminated in refereed journals, and what is important to consider for future manuals?

**Research question 3:** How is music used in the process that ties picture A to picture B, how is this related to the actions of the persons involved, and how does the interaction in picture B differ from picture A?

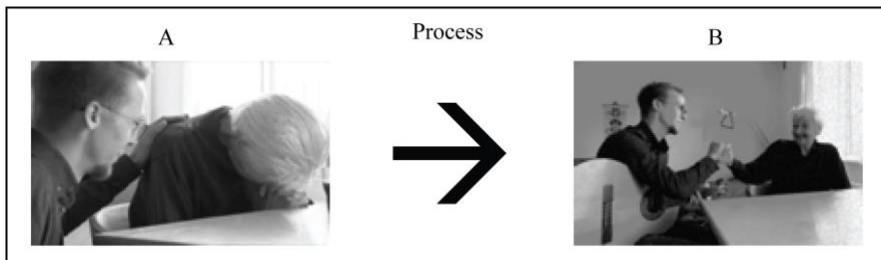


Figure 20 Pictorial research question

Research question 1 covers the topics *person attuned musical interaction*, *clinical settings*, *research settings*, and *manual framework*. Person attuned musical interactions may be characterised by phenomena such as empathy and mirroring. However, according to the findings in Article 1, the concept of mirror neurons cannot be recommended to provide a fact-laden theory to explain an attunement process. Regarding the applicability of PAMI in clinical settings, the preliminary findings presented in chapter 2.2 of this linking text, suggest that PAMI may be applicable by music therapists as well as caregivers in dementia care, although certain ill-defined situations require training as a music therapist. In regard to research settings, viable outcomes needed to be identified. Based on the findings presented in chapter 2.1, EEG might be a feasible method to measure the effect of PAMI in combination with other measures to investigate level of arousal, interest, and emotional state of a person with

dementia. This, however, comes with a range of limitations such as having a person with severe dementia wearing the required devices, or for PAMI to be performed effectively via a monitor. The discussion of a manual framework included an elaboration of the results from Article 2 and an exploration of other mechanisms relevant to a manual by including examples of music therapy manuals to further discuss the topic of manual frameworks, as well as a reflection based on the realist approach to explore mechanisms that could influence a manual's applicability. This information was synthesised into a context-mechanism-outcome pattern configuration (CMOC) and was presented visually as a figure (see figure 17, p. 64). The mechanisms and the CMOC was then related to the anticipated nature of PAMI. Based on this, a programme theory was proposed to conceptualise a PAMI manual, that could allow the formulation of a manual framework for PAMI applicable in both clinical and research settings, by regarding *what*, *when*, *where*, and *who* the manual is meant for and *why* the manual is needed, thus balancing simplicity and fidelity as well as allowing the monitoring of treatment fidelity.

Research question 2 guided the methods applied in Article 2. Based on a scoping review, the answer to research question 2 includes that the manuals contained a variety of text-based dissemination elements and did not include audio/visual material, that different degrees of flexibility in the manuals were apparent, and they all allowed tailoring of the intervention. Based on these findings it was recommended that developers of future manuals consider including audio/visual material if relevant, allow tailoring of the intervention, and provide detailed information regarding appropriate actions while maintaining a degree of flexibility in the manual.

Research question 3 guided the methods applied in Article 3. The article included video data from a music therapy session which was analysed following principles from conversation analysis and included a phenomenological transcription of the video, extraction of data concerning musical parameters using manual and software-based methods, and a detailed sequential analysis of the interaction between the participants in the video. The results included a detailing of how different types of tempo variations were applied in the process connecting picture A with picture B (presented in figure 4 & 20), that the music therapist showed tendencies of adapting his music to match the other participant, that the situations associated with picture A and the process could be described as a person attuned musical arousal regulation process, and that picture B contained a person attuned musical interaction, where the participants interacted reciprocally and with greater equality regarding the initiation of their interactions.

The results from this thesis can be used to inform the concept of PAMI as well as guide the design of a manual for complex interventions such as PAMI that can be applicable both in clinical and research settings.

As the list of mechanisms concerning manuals proposed in this thesis are based on a limited number of methods and types of data, the list of mechanisms would benefit from research that applies other methods and other types of data for exploring their relevance.

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*“So comes snow after fire, and even dragons have their ends.”*  
(Tolkien, 1937/2002, p. 290)

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lan\_2017\_2025/en/

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# APPENDICES

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## Appendix A. Revising the problem statement and research questions

In this appendix, I will provide a progress report describing the process of stating the initial problem statement (PS) and research questions (RQ) and the continuous revision and development of these, thus detailing the process of constructing the PS and RQs (Alvesson & Sandberg, 2013) as well as my continuous reflexivity (Lincoln et al., 2018; Robson & McCartan, 2016).

The initial problem statement and research questions stated in the Ph.D. proposal were:

**Initial PS:** *Which manual-based complex interventions exists that describe methods and ways of being that is used to attune and regulate the arousal level of persons with dementia?*

**Initial RQ 1:** *Based on relevant treatment manuals how can a manual frame be defined that is both applicable in clinical and research settings concerning Person Attuned Interaction/Person Attuned Musical Interaction?*

**Initial RQ 2:** *Which outcomes are relevant and applicable to measure the effect of Person Attuned Interaction/Person Attuned Musical Interaction?*

I will begin by detailing the revision of the PS and then the development and revision of the RQs.

### *Revising the problem statement*

The primary revisions conducted on the PS concerned increasing the clarity and purpose of the PS (Holgaard et al., 2016). One major issue with the initial PS was that it asked a question that could be answered by providing a simple list, thus not inviting further investigation or discussions. Also, it needed a narrower scope. As such, the first revised version was:

**PS 14<sup>th</sup> of November 2017:** *How does academically published manuals on complex social interventions in the field of dementia communicate their content?*

A slight revision was then conducted a few weeks later on the 24<sup>th</sup> of November 2017 where the word “communicate” was exchanged with “disseminate”. The word “disseminate” was chosen instead of “communicate” because communication is a two-way process and dissemination is a one-way process. I would argue that a manual typically is a one-way artefact and found “disseminate” more suitable.

**PS 24<sup>th</sup> of November 2017:** *How does academically published manuals on complex social interventions in the field of dementia disseminate their content?*

This PS guided the literature search and analysis in Article 2. After presenting the scope and results of the literature search reported in Article 2, I made a small change to the description of the content of the manuals. I had found that I wanted to stress that the review would only be concerned with complex interventions that included some kind of social interaction (as opposed to e.g. treatments with medicine, architecture or robots) and as this exact term is used by Pawson et al. (2004) to describe in the general focus in a realist synthesis, I had added the word “social” in the PS from the 14<sup>th</sup> of November 2017. However, this proved to cause some confusion as some reviewers did not recognise this term and instead found it to be “made up” compared to the term “complex intervention”. Thus, I chose to remove the word “social” in order to “speak the same language” as the field in general. This change was added on the 6<sup>th</sup> of February 2018.

**PS 6<sup>th</sup> of February 2018:** *How does academically published manual-based complex interventions in the field of dementia disseminate their content?*

Another revision of the PS was added on the 17<sup>th</sup> of April 2018. This revision was carried out with the aim of providing a clearer description of the specific “population” of manuals and, following the initial analysis of the collected literature in Article 2, specifying what type of information I sought to extract from the analysis:

**PS 17<sup>th</sup> of April 2018:** *How are manual-based complex interventions published in the field of dementia structured and how do they disseminate their content in refereed journals?*

Following the process of my first attempts at publishing Article 2, the PS received another revision, that slightly altered the order of the words and added an extra question. Thus, the anticipated final version of the PS was:

**PS 21<sup>st</sup> of September 2019:** *How are manuals describing complex interventions in dementia care structured and disseminated in refereed journals, and what is important to consider for future manuals?*

## *Revising the research questions*

While the revisions conducted on the PS did not bring about major changes concerning the scope of the PS, the RQs received greater revisions and discarding, and new RQs were put forward as the research process progressed.

The first major revision was conducted following the fact that it no longer was feasible to conduct a pilot study within the time limit of this thesis and the RQ regarding

outcomes was dropped, even though initial work had been done to answer this question. Instead, more attention was given to questions that could be answered by the literature review described in Article 2 which was in a phase of analysis. This included a specific focus on manuals as well as contributing to the conceptualisation of PAI/PAMI and the following RQs were raised:

**RQs 14<sup>th</sup> of September 2017:**

**RQ 1:** *How does manuals on complex interventions in the field of dementia communicate their content?*

**RQ 2a:** *How can the concept of Person Attuned Interaction be defined on the basis of manual-based complex interventions with focus on arousal-imbalance in the field of dementia?*

**RQ 2b:** *How can the concept of Person Attuned Musical Interaction be defined on the basis of manual-based complex interventions with focus on arousal-imbalance in the field of dementia?*

When the PS was revised on the 24<sup>th</sup> of November 2017, RQ 1 was included in it making it obsolete as a RQ and only RQ 2a and 2b remained, and they were now referred to as RQ 1a and 1b. These remained solitary until the 17<sup>th</sup> of April 2018 where a new RQ was raised following the development of the project. The RQs now were the following:

**RQs 17<sup>th</sup> of April 2018:**

**RQ 1a:** *How can the concept of Person Attuned Interaction be defined on the basis of manual-based complex interventions with focus on arousal-imbalance in the field of dementia?*

**RQ 1b:** *How can the concept of Person Attuned Musical Interaction be defined on the basis of manual-based complex interventions with focus on arousal-imbalance in the field of dementia?*

**RQ 2:** *What characterises the professional role of music therapists in the field of dementia care in Denmark?*

This new RQ 2 was raised following an increased public and political interest in the use of music therapy within dementia care and served several goals including an attempt to explicate when the use of music in dementia care would require the presence of a trained music therapist in order to be ethical and effective. Initial work, including a literature review and interviews, was conducted in order to begin answering this new research question. However, it became apparent that the time

remaining in the project would not allow this question to be answered and it was put on hold. Also, following the development across the different projects and work within the PAMI group it became less relevant to address RQ 1a and 1b in this project and they were dropped. Two new RQs were instead raised. The first RQ was almost a re-statement of the initial RQ 1 which addressed the issue of formulating a manual framework that would be applicable in both clinical and research settings. The second RQ had the scope of providing directions for investigating video data, explicating the process that occurred between a person with dementia and a music therapist where the person with dementia seemingly moved from a state of hypo-arousal to a state of arousal where obvious interaction was possible.

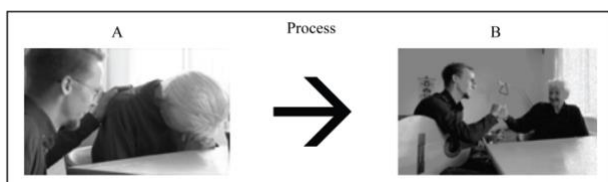
### **RQs 21<sup>st</sup> of September 2019:**

**RQ 1:** *How can a manual frame be formulated for Person Attuned Interaction/Person Attuned Musical Interaction to achieve applicability in both clinical and research settings?*

**RQ 2:** *How does an attunement/regulation process unfold in a music therapy session with a person with dementia, where the person moves from a state of hypo-arousal to being able to engage in a social dialogue/interaction?*

RQ 1 is to be answered in this linking text and RQ 2 is tied to Article 3. Both RQs received another revision. The word “frame” in RQ 1 was changed to “framework” as it was the correct English term. RQ 2 was revised as it caused a certain degree of conflict with the epistemological perspective that is applied in Article 3 (phenomenology) because it makes assumptions about the person and actions involved that potentially are theoretically biased. To combat the potential bias caused by the use of theory-laden words a pictorial research question was instead constructed (see figure 5):

**RQ 2:** *How is music used in the process that ties picture A to picture B, how is this related to the actions of the persons involved and how does the interaction in picture B differ from picture A?*



### *Final refinement of the problem statement and research questions*

Following the revisions, it became clear, that a reordering of the PS and RQs would make the connections between the questions, the articles, and the linking text clearer. RQ 1 remained the same, the PS was renamed RQ 2 and the previous RQ 2 became RQ 3. Thus, RQ 1 would relate to Article 1 and major parts of the linking text, RQ 2 would relate to Article 2, and RQ 3 would relate to Article 3.

### *Final research questions*

**RQ 1:** How can a manual framework be formulated for Person Attuned Interaction/Person Attuned Musical Interaction to achieve applicability in both clinical and research settings?

**RQ 2:** How are manuals describing complex interventions in dementia care structured and disseminated in refereed journals, and what is important to consider for future manuals?

**RQ 3:** How is music used in the process that ties picture A to picture B, how is this related to the actions of the persons involved and how does the interaction in picture B differ from picture A?

## Appendix B. Detailed search results related to article 2

### Selecting databases

As the content of scientific databases vary from between databases the choice of databases can have an influence on the results obtained through the search process. As the choice of databases can influence the results it is important to pick databases that are relevant to the given focus of a literature review and to include more than one database. While one has the option of simply selecting as many databases as possible this strategy will be time consuming and the cost-benefit ratio would not be acceptable. Instead it is advisable to select a number of databases that includes as many aspects related to the concept of interest.

To ensure a thorough search four databases were chosen that had relevance to the concepts of interest; Embase, Psycinfo, CINAHL and Scopus.

The search was carried out in December 2016 in the same order as the databases were presented. Due to a long publication process the search was updated in April 2019. To demonstrate and add transparency to the process, the search histories are detailed in the following chapters.



## EMBASE search history

The first search was carried out on the 2<sup>nd</sup> of December 2016.

<input type="checkbox"/>	#12	#1 AND #8 AND #11	302
<input type="checkbox"/>	#11	#5 OR #10	40,123
<input type="checkbox"/>	#10	'intervention study'/exp	29,967
<input type="checkbox"/>	#9	#1 AND #5 AND #8	173
<input type="checkbox"/>	#8	'health care facility'/exp	1,281,093
<input type="checkbox"/>	#7	#1 AND #5	1,026
<input type="checkbox"/>	#6	'non-pharmacology'	13
<input type="checkbox"/>	#5	'non-pharmacol*'	10,316
<input type="checkbox"/>	#4	'non pharmacol*'	10,316
<input type="checkbox"/>	#3	#1 AND #2	0
<input type="checkbox"/>	#2	'manual-based treatment'	31
<input type="checkbox"/>	#1	'intellectual impairment'/exp	419,953

### Defining P:

P was defined as "intellectual impairment" which is a broader term of dementia and a controlled term.

### Defining I:

Being focused on manual-based intervention, the "I" was first defined as "manual-based treatment". However, combined with "P" the results were 0. Another term was "non-pharmacol\*". The use of a hyphen did not influence the number of results. The use of truncation did, however. Yet another term was "intervention study" which was a controlled term. The two terms "non-pharmacol\*" and "intervention study" was combined using the Boolean operator OR.

### Defining Co:

In order to narrow the results down, I used "Co" to define the context, that I am interested in. In this case, I am interested in manuals or interventions that take place at nursing homes. However, since the "P" has a wider focus than dementia, I used the broader term "health care facility" which is a controlled term.

The search:

Patient		Intervention	Context
Intellectual (c)	impairment	Non-pharmacol*	Health care facility (c)

---

## Intervention study (c)

---

The search was built upon the following formula:

“intellectual impairment” AND (“non-pharmacol\*” OR “intervention study”) AND  
 “Health care facility” = 302 hits

The second search was carried out on the 8th of April 2019

<input type="checkbox"/> History	Save   Delete   Print view   Export   Email	Combine >	using <input checked="" type="radio"/> And <input type="radio"/> Or	<a href="#">^ Collapse</a>
<input type="checkbox"/> #11	#1 AND #9 AND #10			388
<input type="checkbox"/> #10	#2 OR #4 OR #6			53,293
<input type="checkbox"/> #9	#1 AND #7 AND #8			4,324
<input type="checkbox"/> #8	'health care facility'/exp			1,506,894
<input type="checkbox"/> #7	#2 OR #5 OR #6			2,992,868
<input type="checkbox"/> #6	'intervention study'/exp			39,608
<input type="checkbox"/> #5	'non-pharmacol'			2,960,902
<input type="checkbox"/> #4	'non pharmacol'			13,895
<input type="checkbox"/> #3	#1 AND #2			1
<input type="checkbox"/> #2	'manual-based treatment'			36
<input type="checkbox"/> #1	'intellectual impairment'/exp			487,407

Defining P:

P was defined as “intellectual impairment” which is a broader term of dementia and a controlled term and it yielded 487.407 hits

Defining I:

Being focused on manual-based intervention, the “I” was first defined as “manual-based treatment”. Combined with “P” the results were 1. Another term was “non pharmacol\*”. Yet another term was “intervention study” which was a controlled term. The three terms “manual-based intervention”, “non-pharmacol\*” and “intervention study” was combined using OR which yielded 53.293 results

Defining Co:

In order to narrow the results down, I used “Co” to define the context, that I am interested in. In this case, I am interested in manuals or interventions that take place at nursing homes. However, since the “P” has a wider focus than dementia, I used the broader term “health care facility” which is a controlled term. It yielded 1.506.894 results

The search:

Patient		Intervention	Context
Intellectual (c)	impairment	“manual-based treatment”  “Non-pharmacol*”  Intervention study (c)	Health care facility (c)

The search was built upon the following formula:

“intellectual impairment” AND (“manual-based treatment” OR “non-pharmacol\*”  
OR “intervention study”) AND “Health care facility” = 388 hits

*388 in new – 302 in old = 86 extra*

## PsychInfo search history

The first search was carried out on the 2<sup>nd</sup> of December 2016.

60 results for ((( Any Field : ( " intervention study" ) ) ) OR ( ( Any Field : ( " nonpharmacol\*" ) ) ) ) AND ( ( ( Index Terms : ( " Residential Care Institutions" ) OR Index Terms : ( " Treatment Facilities" ) ) ) ) AND ( ( ( Index Terms : ( " Alzheimer' s Disease" ) OR Index Terms : ( " Cognitive Impairment" ) OR Index Terms : ( " Dementia" ) ) ) ) )

### Defining P:

The first search term approached was “dementia” which had 28.609 posts. At psychinfo the broader term of most relevance would be “mental disorders”. This term is however too broad as it includes every type of mental disorder, so I continued using “dementia” as the search term. Besides that, psychinfo does not include Alzheimer’s disease as a narrower term of dementia, but instead treats it as a related term. A search on the term dementia would therefore possibly exclude relevant publications. The term “Alzheimer’s disease” has 38.663 post. Another relevant related term is “cognitive impairment” which has 29.426 post. Combining the three controlled terms covers a similar area as the controlled term used in Embase. Combined they resulted in 80.687 hits.

### Defining I:

Searching for “Manual-based treatment” resulted in 59 hits. Combined with “P” it gave 0 results. “non-pharmacol\*” resulted in 254.413 hits. “Intervention study” resulted in 2.363 hits

### Defining Co:

“nursing home” had two broader terms, “Residential care institutions” with 9.577 posts and “Treatment facilities” with 1.540 posts. I therefor chose these two broader terms, that were related to each other. Combined they resulted in 10.990 hits.

### The search:

Patient	Intervention	Context
Dementia (c)	Non-pharmacol*	Residential care institutions (c)
Alzheimer’s disease (c)	Intervention study	Treatment facilities (c)
Cognitive impairment (c)		

The search was built upon the following formula:

(dementia OR “Alzheimer’s disease” OR “Cognitive impairment”) AND (“non-pharmacol\*” OR “intervention study”) AND (“Residential care institutions” OR “Treatment facilities”) = 60 hits

*note:* the following study could not be exported but would also be excluded because it was a test: *Environmental Audit Tool--High Care (EAT-HC)* By Fleming, Richard; Bennett, Kirsty 2015. doi: <http://dx.doi.org.zorac.aub.aau.dk/10.1037/t45288-000>

The second search was carried out on the 8th of April 2019

**20 Results for ((IndexTermsFilt: ("Alzheimer's Disease")) OR (IndexTermsFilt: ("Dementia"))) OR (IndexTermsFilt: ("Cognitive Impairment")) AND (((Any Field: ("manual-based treatment")) OR (((Any Field: ("non pharmacol\*")) OR (((Any Field: ("intervention study")) AND ((IndexTermsFilt: ("Residential Care Institutions")) OR (IndexTermsFilt: ("Treatment Facilities")))))**

#### Defining P:

The first search term approached was “dementia”. At psychinfo the broader term of most relevance would be “mental disorders”. This term is however too broad as it includes every type of mental disorder, so I continued using “dementia” as the search term. Besides that, psychinfo does not include Alzheimer’s disease as a narrower term of dementia, but instead treats it as a related term. A search on the term dementia would therefore possibly exclude relevant publications. The term “Alzheimer’s disease”. Another relevant related term is “cognitive impairment”. Combining the three controlled terms covers a similar area as the controlled term used in Embase. Combined they resulted in 92.087 hits.

#### Defining I:

Searching for “Manual-based treatment” resulted in 64 hits. “non pharmacol\*” resulted in 2.421 hits. “Intervention study” resulted in 2.862 hits. Combined, they yielded = 5.333 hits

#### Defining Co:

“nursing home” had two broader terms, “Residential care institutions” with 10.298 posts and “Treatment facilities” I therefor chose these two broader terms, that were related to each other. Combined they resulted in 11.869 hits.

#### The search:

Patient	Intervention	Context
<hr/>		

Dementia (c)	“Manual-based treatment”	Residential institutions (c)	care
Alzheimer’s disease (c)	“Non pharmacol*”	Treatment facilities (c)	
Cognitive impairment (c)	“Intervention study”		


































The search was built upon the following formula:

(dementia OR “Alzheimer’s disease” OR “Cognitive impairment”) AND (“Manual-based treatment” OR “non-pharmacol\*” OR “intervention study”) AND (“Residential care institutions” OR “Treatment facilities”) = 20 hits

*20 in new – 60 in old = -40hits*

## CINAHL search history

The first search was carried out on the 2<sup>nd</sup> of December 2016.

	Search ID#	Search Terms	Search Options	Actions
<input type="checkbox"/>	S11	 S4 AND S9 AND S10	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (12)  <a href="#">V</a>
<input type="checkbox"/>	S10	 S6 OR S8	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (88,500)  <a href="#">V</a>
<input type="checkbox"/>	S9	 (MH "Residential Facilities")	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (2,930)  <a href="#">V</a>
<input type="checkbox"/>	S8	 (MH "Clinical Trials")	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (87,292)  <a href="#">V</a>
<input type="checkbox"/>	S7	 "non-pharmacol"	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (1,375)  <a href="#">V</a>
<input type="checkbox"/>	S6	 "non-pharmacol"	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (1,375)  <a href="#">V</a>
<input type="checkbox"/>	S5	 S3 AND S4	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (0)  <a href="#">V</a>
<input type="checkbox"/>	S4	 S1 OR S2	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (33,545)  <a href="#">V</a>
<input type="checkbox"/>	S3	 "Manual-based treatment"	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (17)  <a href="#">V</a>
<input type="checkbox"/>	S2	 (MH "Intellectual Disability")	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (10,354)  <a href="#">V</a>
<input type="checkbox"/>	S1	 (MH "Dementia")	Search modes - Boolean/Phrase	 <a href="#">View Results</a> (23,343)  <a href="#">V</a>

Defining P:

The term “dementia” yielded 23.343 results. It is a narrower term of Mental disorders → Psychotic disorders → Organic mental disorders, psychotic. Another narrower term of Mental disorders is Intellectual disability. It yielded 10.354 results. Together they yielded 33.545 hits.

Defining I:

“Manual-based treatment” yielded 17 results. Combined with “P” it yielded 0 hits. “non-pharmacol\*” yielded 1.375 results. “Intervention study” was not a useful term in this database. Instead the term “clinical trial” was used. It is a narrower term of experimental studies and includes terms such as intervention trials and therapeutic trials. It yielded 87.292 results. Together they yielded 88.500 results.

Defining Co:

Nursing home was a narrower term of Residential facilities, which also includes the term Halfway houses. It yielded 2.930 hits

The search:

Patient	Intervention	Context
Dementia (c)	Non-pharmacol*	Residential facilities (c)
Intellectual disability (c)	Clinical trial (c)	

The search was built upon the following formula:

(Dementia OR “intellectual disability”) AND (“non-pharmacol\*” OR “Clinical trial”) AND “residential facilities” = 12 hits.

The second search was carried out on the 8th of April 2019

Search ID#	Search Terms	Search Options	Actions
<input type="checkbox"/> S11	((MH "Residential Facilities") AND (S6 OR S8)) AND (S4 AND S9 AND S10)	Search modes - Boolean/Phrase	View Results (17)  View Details  Edit
<input type="checkbox"/> S10	((MH "Residential Facilities") AND (S6 OR S8))	Search modes - Boolean/Phrase	View Results (53)  View Details  Edit
<input type="checkbox"/> S9	(MH "Residential Facilities")	Search modes - Boolean/Phrase	View Results (3,962)  View Details  Edit
<input type="checkbox"/> S8	(MH "Clinical Trials")	Search modes - Boolean/Phrase	View Results (144,107)  View Details  Edit
<input type="checkbox"/> S7	"non pharmacol**"	Search modes - Boolean/Phrase	View Results (3,096)  View Details  Edit
<input type="checkbox"/> S6	"non-pharmacol**"	Search modes - Boolean/Phrase	View Results (3,096)  View Details  Edit
<input type="checkbox"/> S5	(S1 OR S2) AND (S3 AND S4)	Search modes - Boolean/Phrase	View Results (0)  View Details  Edit
<input type="checkbox"/> S4	S1 OR S2	Search modes - Boolean/Phrase	View Results (51,238)  View Details  Edit
<input type="checkbox"/> S3	"manual-based treatment"	Search modes - Boolean/Phrase	View Results (6)  View Details  Edit
<input type="checkbox"/> S2	(MH "Intellectual Disability")	Search modes - Boolean/Phrase	View Results (17,587)  View Details  Edit
<input type="checkbox"/> S1	(MH "Dementia")	Search modes - Boolean/Phrase	View Results (33,894)  View Details  Edit

Defining P:

The search term “dementia” yielded 33.894 results. It is a narrower term of Mental disorders → Psychotic disorders → Organic mental disorders, psychotic. Another narrower term of Mental disorders is Intellectual disability. It yielded 17.587 results. Together they yielded 51.238 hits.

Defining I:

“Manual-based treatment” yielded 6 results. Combined with “P” it provided 0 hits. “non-pharmacol\*” as well as “non pharmacol\*” yielded 3.096 results. “Intervention study” was not a useful term in this database. Instead the term “clinical trials” was used. It is a narrower term of experimental studies and includes terms such as intervention trials and therapeutic trials. It yielded 144.107 results. Together they yielded 147.203 results.

Defining Co:

Nursing home was a narrower term of Residential facilities, which also includes the term Halfway houses. It yielded 3.962 hits

The search:



Patient	Intervention	Context
Dementia (c)	Manual-based treatment	Residential facilities (c)
Intellectual disability (c)	Non-pharmacol*	
	Clinical trials (c)	

The search was built upon the following formula:

(Dementia OR “intellectual disability”) AND (“non-pharmacol\*” OR “Clinical trial”) AND “residential facilities” = 17 hits

*17 in new – 12 in old = 5 extra*

## Scopus search history

The first search was conducted at the 5<sup>th</sup> of December 2016.

19 (( TITLE-ABS-KEY ( dementia ) ) OR ( TITLE-ABS-KEY ( "cognitive impairment" ) ) OR ( TITLE-ABS-KEY ( "intellectual disability" ) ) OR ( TITLE-ABS-KEY ( "intellectual impairment" ) ) ) AND ( ( TITLE-ABS-KEY ( "manual-based treatment" ) ) OR ( TITLE-ABS-KEY ( "non-pharmacol*" ) ) OR ( TITLE-ABS-KEY ( "intervention study" ) ) ) AND ( ( TITLE-ABS-KEY ( "nursing home" ) ) OR ( TITLE-ABS-KEY ( "health care facility" ) ) OR ( TITLE-ABS-KEY ( "residential care institutions" ) ) OR ( TITLE-ABS-KEY ( "treatment facilities" ) ) OR ( TITLE-ABS-KEY ( "residential facilities" ) ) ) )	275 document results
18 ( TITLE-ABS-KEY ( "nursing home" ) ) OR ( TITLE-ABS-KEY ( "health care facility" ) ) OR ( TITLE-ABS-KEY ( "residential care institutions" ) ) OR ( TITLE-ABS-KEY ( "treatment facilities" ) ) OR ( TITLE-ABS-KEY ( "residential facilities" ) )	131,305 document results
17 ( TITLE-ABS-KEY ( "manual-based treatment" ) ) OR ( TITLE-ABS-KEY ( "non-pharmacol*" ) ) OR ( TITLE-ABS-KEY ( "intervention study" ) )	50,194 document results
16 ( TITLE-ABS-KEY ( dementia ) ) OR ( TITLE-ABS-KEY ( "cognitive impairment" ) ) OR ( TITLE-ABS-KEY ( "intellectual disability" ) ) OR ( TITLE-ABS-KEY ( "intellectual impairment" ) )	206,860 document results

At the time of this search Scopus did provide a thesaurus. The search is therefor built upon un-controlled terms. The terms will be defined by trying out terms, that has been used in the previous three searches.

### Defining P:

The first term used was “dementia” which resulted in 148.344 hits. “Cognitive impairment” resulted in 54.368 hits. “Intellectual disability” gave 19.349 results. “Intellectual impairment” gave 13.808 results. Combined results = 206.860

### Defining I:

“Manual-based treatment” yielded 62 hits. “Non-pharmacol\*” yielded 8.741 hits. “Intervention study” yielded 41.586 results. Combined results = 50.194

### Defining Co:

“Nursing home” gave 57.092 results. “Health care facility” resulted in 62.669 hits. “Residential care institutions” gave 47 hits. “Treatment facilities” gave 9.772 hits. “Residential facilities” gave 6.012 hits. Combined results = 131.305

### The search:

Patient	Intervention	Context
Dementia	Non-pharmacol*	Nursing home
Cognitive impairment	Intervention study	Health care facility

Intellectual disability	Residential care
	institutions
Intellectual impairment	Treatment facilities
	Residential facilities

The search was built upon the following formula:

(dementia OR “cognitive impairment” OR “intellectual disability” OR “intellectual impairment”) AND (“non-pharmacol\*” OR “intervention study”) AND (“nursing home” OR “health care facility” OR “residential care institutions” OR “treatment facilities” OR “residential facilities”) = 275 hits

The second search was conducted at the 8<sup>th</sup> of December 2019

### 351 document results

[View secondary documents](#) [View 32 patent results](#)

((TITLE-ABS-KEY (dementia)) OR (TITLE-ABS-KEY (“cognitive impairment”)) OR (TITLE-ABS-KEY (“intellectual impairment”)) OR (TITLE-ABS-KEY (“intellectual disability”))) AND ((TITLE-ABS-KEY (“Manual-based treatment”)) OR (TITLE-ABS-KEY (“non pharmacol”)) OR (TITLE-ABS-KEY (“intervention study”))) AND ((TITLE-ABS-KEY (“nursing home”)) OR (TITLE-ABS-KEY (“health care facility”)) OR (TITLE-ABS-KEY (“residential care institutions”)) OR (TITLE-ABS-KEY (“treatment facilities”)) OR (TITLE-ABS-KEY (“residential facilities”)))

#### Defining P:

The first term used was “dementia” which resulted in 172.061 hits. “Cognitive impairment” resulted in 70.579 hits. “Intellectual disability” gave 26.566 results. “Intellectual impairment” gave 19.656 results. Combined results = 249.633

#### Defining I:

“Manual-based treatment” yielded 70 hits. “Non pharmacol\*” yielded 11.351 hits. “Intervention study” yielded 51.774 results. Combined results = 62.917

#### Defining Co:

“Nursing home” gave 62.682 results. “Health care facility” resulted in 71.182 hits. “Residential care institutions” gave 69 hits. “Treatment facilities” gave 11.455 hits. “Residential facilities” gave 6.230 hits. Combined results = 147.030

The search:

Patient	Intervention	Context
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Dementia	“Manual-based treatment”	“Nursing home”
“Cognitive impairment”		“Health care facility”
	“Non pharmacol*”	
“Intellectual disability”		“Residential care institutions”
“Intellectual impairment”	“Intervention study”	
		“Treatment facilities”
		“Residential facilities”

The search was built upon the following formula:

(dementia OR “cognitive impairment” OR “intellectual disability” OR “intellectual impairment”) AND (“non pharmacol\*” OR “intervention study”) AND (“nursing home” OR “health care facility” OR “residential care institutions” OR “treatment facilities” OR “residential facilities”) = 351 hits

## Appendix C. Search protocol related to article 2

1. Relevant search terms will be found in the thesaurus for each PICO-category (describe the selection of search terms)
2. Searches within each category will be conducted (show the results/number of hits)
3. Searches between each category will be conducted (show the results/number of hits)
4. The results will be downloaded as a .ris file and imported into Mendeley in a separate folder
5. The results from all searches will be combined in a master folder in Mendeley in order to detect and remove duplicates (which will be crosschecked in Excel)
6. Results will be screened according to the inclusion and exclusion criteria by title and abstract (note why a hit is excluded). “maybes” will be included. Mendeley will be used to screen and the read/unread function will be used to keep track of progress. The files will also be sorted in two folders, included and excluded. Excel will also be used to keep track of included/excluded material and a comment on, why material has been excluded.
7. A second screening will sort and analyse the results in Excel on the basis of the abstract.
  - a. Manual/protocols
  - b. Reviews
  - c. Training programme
  - d. Other
8. Full-text will be obtained for articles complying to theme a, b or c. Full-texts not complying to the inclusion criteria will be excluded
  - a. Manual/protocols
  - b. Training Programme
  - c. Reviews
9. Thematic analysis
  - a. The different type of articles will be analysed thematically. The themes will be constructed based on the research question, peer consulting and the included material and will include typical bibliographic information.
  - b. The analysis will begin with the reviews and then the training programmes. This is done in order to uncover extra manuals via chain-searching.
10. Analysing Reviews
  - a. Different inclusion criteria for the reviews will be applied:
    - i. Inclusion: Publication date from 2009 until now

- ii. Exclusion: No description of search method
  - iii. Analysis: Search for protocol, model, manual
    - 1. Find reviews that presents relevant models/manuals or studies that are presented as containing a manual
  - iv. Extra studies identified that might contain a manual will be obtained and assessed for inclusion
11. Analysing Training Programmes
- a. Analysis focusing on duration of training, topics, theory, didactics and use of manuals.
  - b. Extra studies identified that might contain a manual will be obtained and assessed for inclusion
12. Analysing manuals
- a. Themes constructed and applied to each included manual
  - b. The themes related to each manual is grouped together to provide an overview

## Appendix D. Phenomenological transcript related to article 3

This document contains a “phenomenological” transcript of the 9min, 44sec excerpt of the session with Else. As such, the language and content of the transcription attempts to uphold classical phenomenological virtues of describing object *as they appear* while refraining from interpretations. One could argue, that this provides an *etic* perspective of the data... The process of transcribing led to a segmentation of the excerpt into 20 scenes.

The segmentation was guided by changes in action, that were deemed noticeable by the transcriber. One parameter was segmenting when a new song began, and another was based on the action occurring in the “scene”.

The transcript is slightly rough in level of detail and temporally but gives an overview of the actions occurring as they unfolded. This relatively low level of detail was chosen to enable a less time-consuming task, as an in-depth analysis was not the goal at the moment of transcription. Even so, a higher level of detail was included in the first four scenes. The have remained present to serve as examples of how the analysis could be expanded upon.

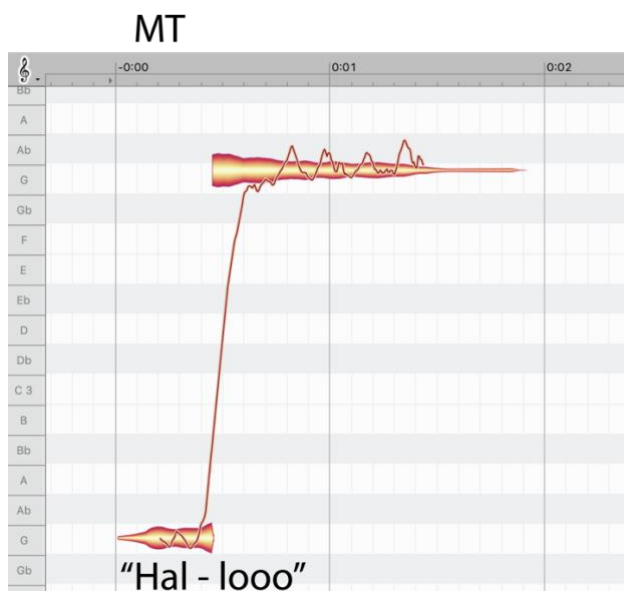
Some scene titles have one, two or three asterix (\*, \*\* or \*\*\*). This is a code that indicates the level of (inter)action Else shows. In line with this, some parts of the prose text are highlighted with yellow marking. This indicates the parts of the prose text where this (inter)action is described.

**1: Intro 0:00 – 0:15**

The music therapist is standing in the hallway with his guitar case on the back and a couple of bags in his hand. A caregiver says, “have fun (god fornøjelse)” and he replies “thank you” with a slight chuckle in his voice. The door is ajar, and he knocks it five times before entering the room. He walks slowly into the room and Else becomes visible in the frame, sitting hunched over her table with her hands folded beneath her chin.

**2: “Hal-looooo Greeting” 0:16 – 0:17**

With a soft voice the music therapist sings “hello (Hallo)” starting low and ending an octave higher, changing note on the syllable

**3: Moving through the room 0:18 – 0:25**

The camera shows the music therapist moving slowly towards Else who has not visibly reacted to the greeting. When he reaches her table, he crouches down beside

/ In “chapters” 1 – 4 I’ve admittedly strayed from my intention of giving a “rough” description and instead gone into musical details, camera positioning and screenshots. While this is interesting, it is also time consuming. I’ll attempt to rough it up, leaving the first chapters as a demonstration of some of the possibilities possible.



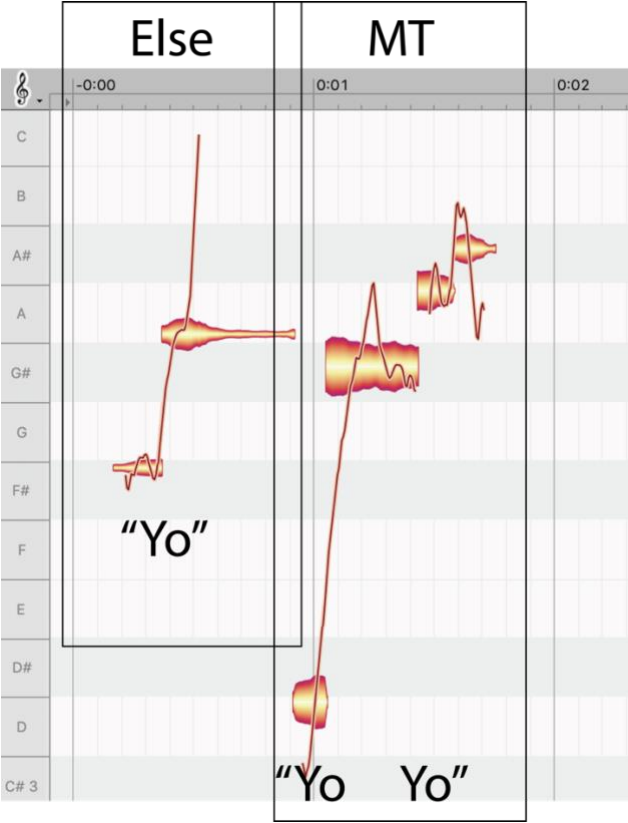
her without taking off his guitar case or putting down his bags, bringing his head in level with her.

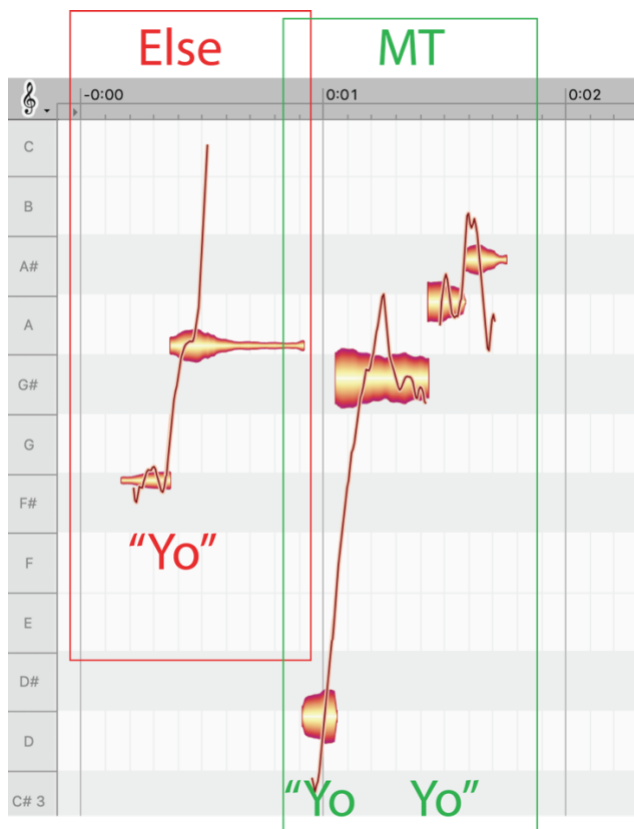
#### **4: Hand on the shoulder and “yoyo impro” 0:26 – 0:46 \*\***

The camera angle changes to an angled-front focus, and the music therapist puts his left hand on Else’s right shoulder and 1,3 seconds later **Else lifts her head slightly.**

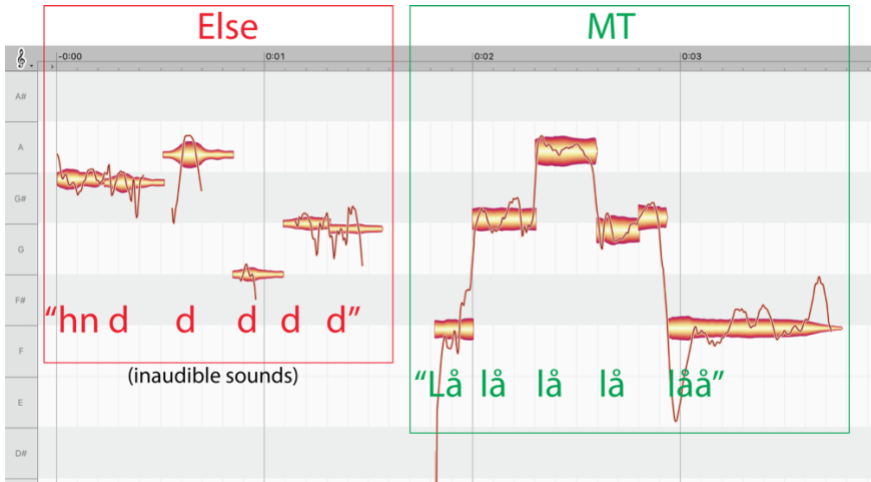


The music therapist says “Hello Else (Goddag Else)” with song qualities lingering in his voice. **Else then says “yo”** and the music therapist replies “yo yo”.

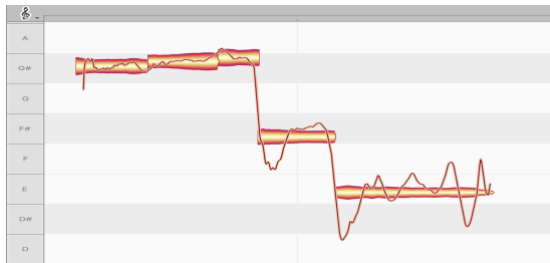




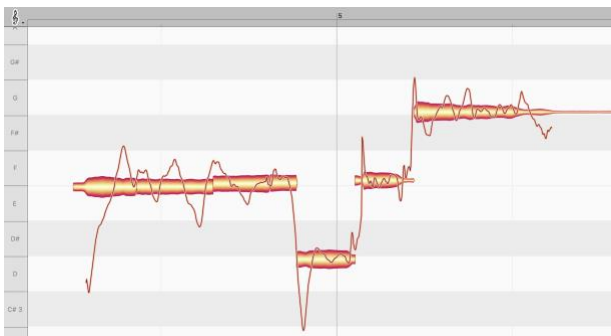
Else utters several one-syllable sounds un-audible to the recording but with qualities that resembles the “yo” from before. The music therapist replies “la la la laa” in a major arpeggio melody



Silence occurs for a few seconds and the music therapist resumes singing “yo yo yo yo yoo” with the first three notes on the major third and descending to the root note. Else does not show any response to this.



The camera moves out of position making the visual material incomprehensible for some time. After three seconds of silence the music therapist sings a new melody humming on an “m”. The melody begins on a second with three notes and descends to the root, climbing back up to the major third.



The camera is brought back into position, now zoomed in on the face of the music therapist from an angle.



There is still no visible/audible response from Else and the music therapist keeps silent for three seconds.

### **5: *Nest of the Lark* 0:47 – 2:55\***

The music therapist starts singing the Danish folk tune “Nest of the Lark (Jeg ved en lærkerede)” in a slow tempo with an airy voice while keeping his hand on Else’s shoulder. The first verse has slightly prolonged pauses near the end. The second verse has several prolonged pauses in the first half of the verse. The third verse is sung in changed meter coming from 4/4 and becomes 3/4 with a legato feel. Else moves slightly at 1:55 raising her head slightly and lowering her still folded hands. The music therapist’s hand is still on Else’s shoulder. However, the camera now zooms in on Else, leaving the hand out of the frame. The music therapist makes a slightly prolonged pause and continues the third verse. Else resumes her position with her head lowered after a few seconds. As the music therapist enters the fourth verse, now with a 6/8 feeling, Else lowers her head slowly and gradually more towards the table. In the last half of the fourth verse the music therapist returns to a 4/4 feeling with a strong ritardando in the last strophe. At the beginning of the fifth verse Else’s head is almost touching the table. The music therapist retrieves his hand from the back of Else’s chair, which at some point has been moved onto the back of the chair from her shoulder. While maintaining a 4/4 feeling, the music therapist uses several prolonged pauses, some which seem to be closely related to Else making small “bopping” motions with her head. As the last word is sung, Else lets her head drop the last millimetre unto the table top.

### **6: Unpacking 2:55 – 3:16**

The music therapist stands up and walks out of the frame. Else remains still with her head on the table.

### **7: “Hmhmhm impro” 3:17 – 3:19**

Else is in the same position and the music therapist hum three identical notes on a “hm” sound, still outside of the frame

**8: Fetching a chair 3:20 – 3:36 \***

The camera spins around leaving Else and shows the music therapist leaning forward in the action of placing his bags. He has already removed the guitar case from his back outside of frame. After placing the bags, he picks up a chair and walks back to Else where he places the chair a small distance away from her and to her right side. The chair makes a noise when he places it (3:32), and **she lifts her head from the table and rubs her nose**. Her head does not become fully raised. Instead, she is still facing downwards, and her eyes seem to be closed.

**9: Humming *Nest of the Lark* 3:37 – 4:01 \***

Out of frame the music therapist starts humming “Nest of the Lark” in a slightly altered 4/4 feeling (2 fourths = 1 dotted fourth + 1 eighth). The camera is zoomed in on Else who maintains her head raised but facing downwards. Her mouth is open and moving slightly, and her eyelids show signs of eye-movement, her eyes still not being visible. Sounds of the guitar case being zipped open appears as the music therapist continues humming the song. **When the song reaches the second half of the verse an almost inaudible sound or two-tone melody appears from Else**. It ends as the song enters the last strophe and Else closes and opens her mouth a few times, while staying hunched over, facing down with her eyes closed and hands folded.

**10: “Yam yam yam yam impro” 4:02 – 4:22**

The music therapist sits down next to Else with his guitar. He sings a short one-note melody “yam yam yam yam”. Else does not show any signs of responding. The camera turns around taking us outside of the room as the journalist runs to fetch the tripod for the camera. Meanwhile, the music therapist repeats the strophe, adding an extra “yam” and changing the notes of the two last “yams” (root, root, root, lowSixth, lowFifth). He then sings “yam ya-yam” on the root note and strums his guitar, voicing a Cmajor and singing “uuu” on the fifth. The camera has not yet returned to bring the two persons into frame.

**11: The Sun Rises in The East 4:23 – 5:32\***

Outside of frame the music therapist begins to sing the Danish psalm and morning song “The Sun Rises in The East (I østen stiger solen op). The feeling<sup>2</sup> is 4/4 with slightly prolonged pauses. The camera returns, providing a short view of the music therapist sitting slightly hunched over his guitar next to Else, looking at her and Else

<sup>2</sup> Many things are happening in the guitar throughout the excerpt, but I will try to leave this for another time

still sitting with her head bowed down. The camera is then focused on the music therapists' hands on the guitar, and shortly after on his face. In the transition between these two frames, Else is seen shortly, still with a bowed head. Extra-long pauses appear at the end of the verse at the last three words.

As the music therapist begins to sing the first verse again, the camera is turned around leaving nothing in frame. Clicking sounds follow that indicate the camera is being put unto the tripod. Once the camera resumes focus, it shows the music therapist playing guitar and singing next to Else and looking at her, who now has her head resting on the table top once again.

*I know I wasn't gonna comment on it, but the guitar!!! The strum has changed within and between the verses and at the beginning of the third verse it changes drastically... but it's for another time...*

The music therapist now sings the "third verse" in a steady 4/4 feeling using only "la la la" (5:12) still maintaining his eyes on Else who remains seated with her head on the table. A short second before the beginning of the last half of the verse, Else moves her head slightly from side to side and then lifts it off of the table by a few centimetres. As this happens the music therapist prolongs a pause, straitens his back and moves a bit away from Else. He then continues the verse looking at Else and slowly he hunches down over his guitar again, moving closer to Else. Else keeps her head bowed low but begins bopping it at the last strophe and begins an inaudible two-tone rotary hum.

#### **12: "Impro intermezzo" 5:33 – 5:56 \*\***

Else bops her head and hums a slightly inaudible two-tone rotary melody. The music therapist continues playing in the same key and feeling and begins to hum an improvised melody while looking at Else. He repeats the same strophe twice. Else continues bopping her head bopping and, still inaudibly, changes her voicing to an "la" sound with a slight rhythmic change. This only lasts a few seconds and Else then discontinues her sounding while keeping her mouth open. She has been hunched forward facing down the entire time. Her head bopping becomes smaller but continues as the music therapist returns to the song from before.

#### **13: The Sun Rises in the East reprise 5:57 – 6:20 \***

The camera is zoomed in on Else. The music therapist, not having stopped the music, re-enters the song "The Sun Rises in the East". Else resigns her head bopping after a few seconds. Her face, shown from an angle, seems still. As the verse unfolds her head moves slowly towards the table. At the last chord of the verse her nose touches the table. The music therapist plays a short, one-bar cadence with a downwards bass-movement on the guitar with a slight rubato feeling which seems to match Else's

downwards movement of her head, her forehead being a few millimetres from the table top at the sound of the root chord.

#### **14: “Impro commentary” 6:21 – 6:45 \*\***

With the root chord of the previous song still sounding the music therapist sings a short one-note melody on the low fifth “ja ja ja ja”, and chuckles slightly as Else’s forehead reaches the table top. From her hunched position Else begins to voice a melody with her mouth closed which quickly becomes voiced open mouthed. The melody consists of short, quick notes. The music therapist replies with a short melody using the sound “duh duh duh duh du-du-duuh”. Else changes her melody into a three-note rotary melody using the sound “lâ-lâ lâ-lâ lâ” and she shows small movements with her head and body. The music therapist changes his sound into a similar “lâ lâ lâ lââ” sound, using only a single note and a slower pace, playing a b6 → 5 chord progression. Else’s voice becomes still as does her movements. The music therapist sings a melody similar to the previous with a slight change in vowel sound, now being closer to “la la la laa”, over the same b6 → 5 chord progression. Humming three upwards moving notes, he reaches the root note and plays a 4 → 5 → 1 cadence, his voice and the guitar fading into silence. Else has not moved and is still sitting quietly hunched with her forehead on the table top.

#### **15: Repositioning the chair 6:46 – 6:47**

The music therapist raises himself a bit from his chair, moves it a bit more to the side to face Else, and he then sits back down on it.

#### **16: “Ambient long note impro” 6:48 – 7:24**

The music therapist strums a root chord, takes a quick look at his watch, and strums the chords twice. The camera zooms unto his fingers as he sings a short melody, using a “hm” sound. He pauses for a second, after which he voices a single, long note (the major third) on an airy “åååh” sound while strumming a short cadence. The camera pans back to Else, who is still in her hunched position with her head resting on the table, not moving. The music therapist sounds a new long note (still the major third) on the sound “ahmmm” and plays another cadence. Else remains still apart from a few small movements around her mouth, and her head slides slightly forward on the table. The camera pans back to the music therapist who has stopped singing and instead has begun to play a short melody on the high e-string with the b-string as a drone and the remaining strings open allowing sympathetic resonance. The short melody ends in the root chord and the camera begins to zoom out.

#### **17: Oh, Mary 7:25 – 9:14 \*\*\***



With both the music therapist and Else in focus, the music therapist begins to play the Danish evergreen “Oh Mary (Åh, Marie)”. The music therapist strums the chords with many breaks and leans himself towards Else, who remains still with her head on the table. As he enters the second half of the first verse, Else begins to raise her head from the table. Still facing the table, she rubs her nose and the music therapist straitens himself bit. At the end of the first verse, Else retracts her hand, nods her head, begins to smile and laugh, open her eyes slightly and brings her right hand unto the table. Meanwhile, the music therapist continues to play and sing and smile as Else performs her movements.

As the chorus begins, Else starts moving her right hand forward on the table in an up-and-down motion, with her fingers spread out. For the first time in the session her head becomes completely erect, her face brought up and she is smiling and laughing while looking with “smiling eyes” towards the journalist. She then rubs her nose, looks down again and places her hand on the table, keeping it still. The music therapist continues to play the chorus and Else makes nodding motions with head, opening and closing her mouth a few times. At the end of the chorus her she is facing the far end of her table. Her eyes seemingly closed and her mouth open, she bops her head up and down.

The second verse begins, and the camera zoom in on Else’s face. She is still bopping her head and she opens her eyes, looking towards the far end of the table. The music therapist changes his strumming to a palm mute after a short while. Else keeps bopping her head, now closing her eyes and mouth. She then raises her head and keeps it still for short while with her eyes slightly open, after which she returns to bopping the head slightly and closing her eyes. At the end of the second verse the music therapist makes a break on the last word, and Else rubs her nose.

The camera still focusing on Else’s face, the music therapist sings and plays the chorus with another strum pattern. Else discontinues her nose rubbing and lifts her head slightly with her eyes closed. Not bopping her head, she opens and closes her eyes and mouth a few times. During the last strophe of the chorus she keeps her head still and her eyes slightly open. As the chorus comes to an end, she starts smiling with slightly opened eyes, and begins to move her hand on the table, causing it to rock (not visible at this time, this becomes evident by a later frame zoomed out showing the motion on the table with the same sound apparent in this frame).

Commencing the third verse, the music therapist changes strumming to a semi-muted strum, emphasizing the shuffled lift. The camera pans over to his face. At the end of the verse the camera zooms out, showing Else moving her hand back and forth on her spread out fingertips on the table, while gazing with nearly closed eyes towards the far end of the table. The camera zooms onto her face and she moves her jaw up and down with small movements.

Returning to the chorus the music therapist changes strumming to a light arpeggio. Else maintains her position for a short while, after which she closes her eyes and mouth, still rocking the table. Her head moves in small, rocking motions. As the chorus comes to the last words, she raises her head upwards and towards the music therapist, moving outside of the camera's frame.

Not entirely in frame yet, she makes a single nod towards the music therapist as the last chord is strummed. The camera zooms out, showing them both facing each other, smiling and laughing with eye contact. Else is moving her hand on the table in a rhythmical pattern left and right instead of back and forth. Her mouth is opened wide in a smile.

#### **18: "Hi there, Else" and holding hands 9:15 – 9:20 \*\*\***

As Else continues moving her hand from side to side on the table and look, smile and laugh at the music therapist, he smilingly strums a root chord, nods his head and says, "Hi there, Else (Go'daw, Else)" while maintaining his left hand on the fretboard. He starts a new laughter and Else maintains her eye contact, draws breath and laughs again. She then looks away shortly, and the music therapist moves his right hand onto Else's right hand on the table and greets her again (Pænt goddag). As his hand reaches her hand, she looks back towards him, smiling and laughing. Their hands, held together, are lifted off the table and moves rhythmically up and down and the two of them smiles and looks at each other.

#### **19: "Impro duet" 9:21 – 9:34 \*\*\***

With his left hand the music therapist does a hammer-on/pull-off sound a 5 – 1 note on the low e-string. Their hands held together throughout the following, Else begins to sing a melody. After the first two notes she does a small flicking motion with her head and raises her eyebrows, her mouth still smiling. The music therapist begins to sing along in the style of Else, who also continues her singing. They both draw breath and look at each other. Almost simultaneously they sing a new melody. Else makes a motion with her jaw, the music therapist raises his eyebrows and sings a note and Else audibly sings too. They sing together almost in unison for a while. Else then begins to laugh while turning her gaze away from the music therapist towards the journalist. The music therapist begins laughing as well. Else then flicks her fingers slightly, opening her grip, and the two releases their hands from each other while continuing their laughter.

#### **20: End of the excerpt 9:35 – 9:44**

Else, now looking forward, places her hand on the table top with her fingers spread out. Touching the table with the tips of her fingers she does not move her hand. The music therapist bends down towards the floor [where he is flicking through his

songbook]. Else looks slightly to the right and begins moving her hand from side to side. The music therapist sits back up. Else looks forward again and moves her hand from side to side. As the camera begins to zoom onto the face of the music therapist, Else begins to move her hand backwards and forwards on the table, remaining on the fingertips. The excerpt ends with a frame of the music therapists face as he looks down.

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